STATE OF CALIFORNIA

GOVERNOR'S BLUE RIBBON FIRE COMMISSION

BEFORE THE GOVERNOR'S BLUE RIBBON FIRE COMMISSION, Senator William Campbell, Chair	)))))	TRANSCRIPT OF PROCEEDINGS 2/5/04 Riverside, California

CHAIR CAMPBELL: First of all, I have some housekeeping announcements to make before we start the official meeting. For those of you on the dais, there is not a lot of room behind us, so be very careful, Marriott cannot afford that kind of a lawsuit. However, we may have some trial lawyers in the audience who would appreciate your falling. I would ask the commission members to please RSVP so we know exactly how many are coming to the meetings. Thirdly, it helps the staff, as I've said. The agenda this morning is very packed members, for the day, and so we'd like to get all the information we need, but at the same time, move it along as quickly as possible.

There are two Command and Control Communications Units outside here, so at our breaks and at lunch, you might want to go through those and everybody is more than welcome to visit those. I'd like to on behalf of Assembly Member **JOHN BENOIT** welcome you to the 64th Assembly District, which is his District, and he is still in Sacramento and unable to be down here today, so on his behalf I would like to welcome you to this District and now I'd like to ask the supervisor from Riverside County, you know this is our fifth hearing and we have had a hearing in every county in which the fires caused the devastation and so Supervisor **VENABLE** if you'd like to welcome us.

MR. VENABLE: I appreciate that. Thank you Mr. Chairman. I do want to welcome the entire Board and also the entire group of folks that we have here today because I know we have a

lot of folks from the **IDOUAVE** area, **ANSA** area, **WONGA** area, we've got the newspapers from all those areas and we really appreciate the seriousness that you are taking with what this Blue Ribbon Committee is doing.

CHAIR CAMPBELL: Thank you very much for coming here to Riverside and we appreciate it. Thank you Supervisor, we're pleased to be here. We'd like to begin the meeting with the Pledge of Allegiance to the Flag of this great nation and Assembly Member Chris Kehoe will lead us in that pledge.

ASSEMBLYWOMAN KEHOE: Thank you Mr. Chairman (**UNINTELLIGIBLE)**. Members please face the flag.

[Pledge of Allegiance is recited.]

CHAIR CAMPBELL: I'd like to start with the self-introduction. If each member of the commission would introduce themselves, we'll start with Mayor Judith, if you'd like to begin.

MAYOR VALLES: My name is Judith Valles. I'm the Mayor of the City of San Bernardino.

Ms. STEFFEN: I'm Debbie STEFFEN. I'm the Director of Emergency Services for San Diego County and I'm sitting in for Supervisor Greg Cox.

MR. WILLIAMS: My name is Jerry Williams. I'm the Director of Fire and Aviation Management for the United States Forest Service, Washington D.C.

MR. SEDIVEC: My name is Jeff Sedivec, President of the California State Fire Fighters Association.

MR. VERGA: I'm Pete Verga. I'm the Principal Deputy Assistant Secretary of Defense for Homeland Defense from the Pentagon.

MR. COLEMAN: My name is Ron Coleman. I'm Interim Fire Chief in Santa Rosa, California.

Ms. TUTTLE: I'm Andrea Tuttle, Director of the California Department of Forestry and Fire Protection.

MR. HAMILTON: I'm Larry Hamilton. I'm the Director of Fire and Aviation for the Bureau of Land Management at the National Emergency Fire Center in Boise.

CHAIR HANSBERGER: I'm Dennis Hansberger. I'm the Chairman of the Board of Supervisors, San Bernardino County.

MR. MCCAMMON: I'm Bill McCammon, Fire Chief, Alameda County Fire Department and President of the California Fire Chief's Association.

CHIEF FREEMAN: I'm Michael Freeman, Fire Chief, Los Angeles County Fire Department representing Fire Scope.

CHIEF BAMATRRE: Fire Chief, Los Angeles City representing the California Metropolitan Fire Chiefs.

SENATOR SOTO: I'm Senator Nell Soto. I represent the area of San Bernardino and a lot of the fires occurred in my area, 32nd Senatorial District.

ASSEMBLYMEN LASUER: My name is Jay LaSauer. I'm the Assemblyman for the 77th District, that's San Diego County east area where the (unintelligible) fire was.

SENATOR HOLLINGSWORTH: I'm Senator Dennis Hollingsworth and represent the areas of San Diego and Riverside County that burned.

CHAIR CAMPBELL: I'd like to announce that both Senator Hollingsworth and Assemblyman LaSore are the two newest members on the commission.

MR. HALEVA: Jerry Haleva, Chief Counsel to the Commission.

ASSEMBLY MEMBER KEHOE: Assembly member Christine Kehoe from the City of San Diego, coastal San Diego neighborhoods and I would also like to point out Mr. Chairman, Dennis Gibson, consultant to Mayor Murphy representing Mayor Murphy's office today.

MR. VENABLE: I'm Jim Venable, Riverside County Board of Supervisors, representing the Third District.

ASSEMBLY MEMBER DUTTON: Bob Dutton, 63rd Assembly District, representing San Bernardino and Riverside County.

SENATOR ALBERT: Deedee Albert. I'm State Senator from San Diego County.

MS. MIKELS: Judy Mikels, Ventura County Supervisor, 4th District, Simi Valley and (**unintelligible**).

MR. CAINE: My name is David Caine. It is my honor to represent Senator Jim Brulte Republican leader.

MS. TAHARA**:** Randi Tahara representing L.A. County Supervisor Yvonne Brathwaite Burke.

CHIEF BOWMAN: Jeff Bowman, Chief San Diego Fire Department.

MR. MARTINEZ: Rick Martinez, California Office of Homeland Security.

MR. WOLF: Bob Wolf, 6th District Vice President, California Professional Firefighters representing California Professional Firefighters.

CHIEF **GORMAN**: Amanda Gorman, Fire Chief of **Chonga** Fire Department.

MR. FUKUTOMI: David Fukutomi, Federal Coordinating Officer, Department of Homeland Security, Federal Emergency Management Agency.

CHIEF PRATHER: I'm Chief Prather, the fire Chief of the Orange County Fire Authority representing the California Emergency Counsel.

CHIEF ZAGARIS: I'm Kim Zagaris, Fire Chief, the Governor's Office of Emergency Services.

CHAIR CAMPBELL: Thank you all very much and Ladies and Gentleman, good morning. My name is Senator Bill Campbell, retired. I'm honored to serve as Chair of the Governor's Blue Ribbon Fire Commission. Welcome to our fifth meeting in a series of meetings being conducted to review the response to the series of destructive fires that devastated Southern California last October and November. The mission of this body is to review our overall response to this disaster and identify what additional actions can be implemented to reduce the loss of life and property to wild land and wild land urban interface fires. Additionally, the commission is also looking at any obstacles that may exist to making improvements and what must be done to overcome these obstacles. I want to reiterate, it is not the purpose of this commission to assess blame or determine fault. California has the best trained, the best equipped and most experienced fire service in the world. Our Federal, State, Local and Volunteer Firefighters have performed brilliantly in protecting the lives and property of all Californians and they deserve our full support. In that spirit, I want to recognize and thank every one of my fellow commission members for their dedication and commitment in attending these meetings. Your commitment of time, energy and focus is testimony to the seriousness of this issue and our mutual commitment to make California safer. Today, we will consider the issues pertaining to the command and control of multi-agency fire service organizations in response to wild land fires, as well as how decisions are made in prioritizing the assignment of firefighting resources and when multiple major fires are raging. We will also hear a number of presentations on the critical role of communications in those situations and the need to improve the communications inner operability of our

public safety agencies. Finally, we will hear presentations on new or emerging technologies that could enhance the effectiveness of combating wildfires under adverse weather or smoke conditions. I have also allowed considerable time for public comment following the formal presentations. I would encourage members of the public to submit written testimony, if possible, and in consideration of their fellow citizen, to limit their remarks to no more than five minutes. All submitted testimony will become part of our official record. Please note that if you have testimony for the commission, please see Mr. Springer who is standing over there waving to somebody and holding up his clipboard at the end of the dais. I remember the most important person when I was in the service, was the person who had the clipboard. If he had a clipboard, you were obviously important and could almost go anywhere. That's Mr. Springer's function today.

Again, thank you for your attendance. Does any member of the commission wish to comment or make an opening statement?

SENATOR HOLLINGSWORTH: Thank you Senator Campbell. I just wanted to thank you as the Chairman and the Governor for the appointment to be a part of this body. As the State Senator representing a district that lost 17 lives nearly upwards of 2,700 homes and 370,000 acres, I have a real keen interest on behalf of my constituents in the subject of this commission's work, obviously, and think that you are absolutely correct in your statement in the mission of this body. We need to explore what happened with these conflagrations and learn from them so that we can do a better job. Where there were successes, we need to talk about those successes. In the case of the cedar fire contained in my district, the fact that there are 90% of the homes still standing in that area is a tremendous success when you are talking about a fire that broke out at absolutely the worst time weather wise, the worst time resources wise and the worst location that it could possibly have broken out. But where there were failures, we need to explore those and improve there as well, and there were failures. And where they were failures of law, we need as the legislature to fix those. Where they were failures of regulation, we need to have the agencies fix those. And if there were failures of command, we need to hold those people accountable. So, I thank you. I thank the Governor and look forward to the work of this commission. Thank you.

CHAIR CAMPBELL: You're welcome.

SENATOR SOTO: Thank you Mr. Chairman. I think this commission gives us the opportunity to change the way we do business as it relates to fire prevention in this state. With last year's fires on

everyone's mind, we should not miss this opportunity to make changes. It's not a question of whether we will face major fires like these again, but when. We should take steps now to ensure that when we do, we will not face the loss of life and property we suffered last October. We must emerge from this process with a comprehensive plan for resource management and prevention and not just in the areas where major fires may occur. We must do what we can to act now, because the longer we wait, the longer our communities and residents are at risk. And I say this in the context of ongoing budget crisis at the State and Local levels. Already we are (**unintelligible**) by communities, forced to cut back or talking about (**unintelligible)** fire protection services. I would argue that fire prevention is one of the areas where we can least afford to cut back or sell our community short and I think that's why – I'm proposing – and this may not go over very well, the people will not – it really will not be a popular measure, but I have already introduced a bill that is a temporary quarter sec increase in sales tax to pay for the equipment purchased in a range of measures designed to minimize the potential for more fire disasters and I know it won't be popular, but I think we have to get behind that measure so we can have at least something to fall back on if this does occur again, not if, when it occurs again. Thank you.

CHAIR CAMPBELL: Thank you Senator. Anybody else?

ASSEMBLYMEN LASUER: With your permission, I'd like to ask the men and women in uniform in the room to stand and be recognized, especially with my home department, Department of Forestry, Fire Protection. A lot of the men and women in this room, along with their brothers and sisters were involved in the firefighting and I'd like to ask them to stand so we can – so the members of the audience can see them. Would you please stand.

[Applause]

MAYOR VALLES: Thank you. I understand the purpose and the goal of the Blue Ribbon Fire Commission and I am pleased to be a part of it. However, those of us in our communities that suffered from these devastating fires have now – we're trying to pick up. I would hope that once this fire commission, or this Blue Ribbon Commission completes it's work and presents it's findings, that there will be a follow up on how we can best help the victims directly. It appears that there is – we have a system. I don't want to say it's completely flawed, but there certainly are some concerns that I have. As we work through FEMA and the Red Cross and local assistance programs, there's got to be a better way to manage the funds so that they

can go directly to the victims. We're having some problems with that. I would hope that once this is completed, we could address that. Thank you.

CHAIR CAMPBELL: You're welcome. I'd like to remind you all that three members of this commission are not here today. Senator Diane Feinstein and Congressman Jerry Lewis and Congresswoman Susan Davis, and that's our connection with the Federal agencies. I would like to welcome Assistant Secretary of Defense Peter Verga here today. I know how much he loves to get out of Washington these last few weeks. The last meeting he was sitting out next to the Bay, having lunch, and when he left that morning it was 20 degrees in Washington. I don't know what it was today, but I want to personally thank Supervisor VENABLE for the lovely weather that you provided.

Anyway, all right, our first witness is the Director of the Office of Emergency Services, Dallas Jones, and Don Root the Deputy Chief of the Telecommunications Branch of the Governor's Office of Emergency Services. Gentleman, it's a pleasure seeing you. Dallas, nice seeing you again. You've been very faithful. You've been our lead off speaker at all of our meetings and we appreciate your being here and we appreciate your support for the commission.

MR. JONES: Mr. Chairman, it is indeed an honor to testify again before your commission and today we are going to talk a little bit about communications interoperability. First I'd like to review a little bit of why we have interoperability problems still in California. Public safety agencies have historically depended upon their own stand-alone systems and there has been little effort to coordinate purchases among the independent agencies to ensure the systems are compatible with one another. Also, because public safety communications require radio spectrum and availability, it is very limited and fragmented among the widely different frequencies, different incompatible radio systems have developed over the years. Public safety radio interoperability has varying levels. At one level, interoperability refers to agencies ability to communicate with one another when responding to one particular incident. Relatively inexpensive technology exists to overcome that level of inoperability on a case-by-case basis. However, at a more sophisticated level, interoperability means the ability to communicate with other public safety agencies on a routine day-to-day basis, and this is a much more expensive proposition. It requires agencies to coordinate their communication systems, operations, equipment purchases and much more on a regional, if not a statewide basis. Interoperability is really the ability for response personnel to communicate across

(**unintelligible)** lines; fire, for example, to police; or across jurisdictional lines, say City to County; and across command levels from incident to the operational level, when necessary. It is not the ability for all persons on these incidents to coordinate and communicate with each other. It is need specific, operational has a different requirement than the tactical. Interoperability is a very dynamic process. (**Unintelligible**) when the first responders first arrive may not work well later in the day when many others have arrived. What works in one situation, does not always work at others; and interoperability is really not an end state, it's a process. New forms and challenges continue to appear yearly. It is also not just a technology issue. It is also an operational practice issue that will require a fair amount of training and retraining over time. Part of the problem we always run into in interoperability is the lack of training of personnel in what's currently available for their use on these incidents. An example would be the CALCORD interoperability frequency, is often unknown, but many of the safety personnel in the state, so therefore, it's under-utilized. In order for mutual aid and interoperability to become complimentary functions, we need to develop agreements we believe similar to and building upon the mutual aid user agreements, use define the operational practices and the tactical standards to enable responders of one discipline to function at multi-discipline incidents in another jurisdiction. In a similar vein, agreements are needed to define operational practices and technical standards when State agencies and Local or Federal agencies share the use of the same frequencies on both a daily or an incident basis. Standardization of the agreements is important to the development of training for first responders statewide. As we have done in the past, committees have represented broad section responders will work with us to put together those standard agreement formats. Incidentally, last year, Assembly **McCONNELL** passed AB2018 and this Bill will provide that a committee primary responsibility, this is a public safety radio strategic planning committee, was established with broad representation from the user groups to take on the and implement the statewide integrated public safety communications system for both state government agencies to be able to coordinate with local government agencies. This committee will go into it a little bit further and we'll talk about shared spectrum and many of the other more complicated issues regarding interoperability. That committee's first report is due into the assembly very soon. We will provide you with a copy of that initial report. This is a fairly in-depth issue that we believe will take a number of years to fully flush out, but we believe it is technically possible to have both a short-term strategy and a longer-term strategy to provide good interoperability on these major

events, because that seems to be where the major problem is. Many counties are able to work together and put together an operational plan and a system within their counties to have interoperability, but it is when we get into county-to-county or bringing in agencies from throughout the state, both law and fire, that we have more of these problems.

At this time, I would like to introduce Deputy Chief of Communications, Don Root (**unintelligible**) to go into the telecommunication system a little bit more fully here in California.

MR. ROOT: Thank you Dallas. Good morning members of the commission and those in the audience. I would like to discuss and present to you some background information on telecommunication systems and also as warning systems developed as a bit of an issue in a couple of cases, some background information on warning systems that exist in the state. In the telecommunications field, we will do a little bit of Interoperability 101, a background as to what the State of Public Safety Communications is; define interoperability; identify some challenges to achieving interoperability; go through what we've done so far to date in California; discuss some issues that OES staff has gleaned in the after action process; and, go through some efforts we are going through to improve interoperability.

We have some recommendations in the telecommunications arena and then as I said, we'll go through a little bit of a review of the warning systems in California.

Communications is a tool used by First Responders just like a police officer's gun, nightstick or car, or a firefighter's hose and source of water. It is one tool the first responders use everyday, but at the same time, one of the least understood by the people using that tool.

Radio uses spectrum. Spectrum is a finite resource man has harnessed and put to productive use. The sound waves and wave (**unintelligible**) are at the low end of the spectrum. The light filling this room is at the very high end of the spectrum. In between there is radio, electromechanical waves that carry information in the form of radio and television signals. In the United States, the spectrum is regulated by two agencies of the U.S. Government. The National Telecommunications and Information Administration for the Federal users, and the Federal Communications Commission for non-Federal users. Over the years, various pieces of the spectrum have been allocated to public safety. Up on the chart, you will see the various public safety bands that are in use. You will note the area in red, the 764 776 block is a brand new chuck of spectrum we will address here very shortly.

As technology has progressed, we have been able to get higher into the spectrum and obtain new (**unintelligible**). In California, there are some major areas that are used. VHF low band used by State and Local agencies. Today, some Fire Departments, some rural Sheriff's, California Highway Patrol; it's really not all of that actively used anymore. There are some issues as far as portable radios, that sort of thing.

Next up, is the VHF high band, and as you will see from the slide, there is three actual subsections there. A military portion, a state and local agencies portion and a federal agency non-military portion. Radio equipment generally will allow the state and local agencies to use – to work with one or the other of the federal blocks, but not both. As we go higher in the spectrum up into the UHF portions, you will see there is some military and some non-military area at the low end and at the high end there is the state and local area. Some radios will allow the non-military and the low end of the state and local areas to operate on the same radios, but in generally state and local agencies can use the two chunks but not into the lower federal spectrum. In 13 areas of the country, the most densely populated areas, some television channels are reallocated and that is the UHF TV. portion. Los Angeles and San Francisco are two of those areas. Higher up the 800 mhz. spectrum and the new 700-mhz. spectrum that will be available in the future are some large areas that a lot of agencies have started developing consolidated radio systems in.

Characteristics of spectrum, the higher the frequency, the shorter the distance the signal will travel. Terrain and urban construction defects propagation in the urban area, the density of buildings for block signals and the very rural areas, terrain, canyons and hills will limit signal travel. We use repeaters or fixed radio stations on top of the terrain or on top of the buildings to relay user signals on the ground using two frequencies. We talked about (**unintelligible**)

(**UNIDENTIFIED MALE SPEAKER**): cell phone. Are they in this category?

MR. ROOT: They use similar (**unintelligible**). They use a repeater. Your cell phone talks to a base station.

(**UNIDENTIFIED MALE SPEAKER**): And it runs out frequently?

MR. ROOT: Right. And as we get into the wild land area, we find that vegetation affects that propagation in the higher frequencies of the A700 and 800 and that the vegetation will tend to absorb the energy.

(**UNIDENTIFIED MALE SPEAKER**): The radio. Do they react to it?

MR. ROOT: No. You may have heard about two types of operation. Conventional and truncate. In a conventional operation, users in particular group, a police district, fire department, users on a fire line in a division, on a dedicated channel for their operations. All users on that channel can hear each other. Anybody who wants to talk on the radio must wait for a clear channel. When no users are talking, that channel sits idle. Over a 24-hour period in the (**unintelligible**) spectrum, most channels sit idle.

In a trunking system, users are in a dedicated talk group. The channels are pooled into a system. The trunking will support many talk groups per channel. When a user in a talk group needs to speak, the system will assign an idle frequency and the talk groups can be prioritized. If you have public works officials doing garbage collection or street maintenance, or that sort of thing, and firefighters or police officers need to get on the air, they can be prioritized into the system where they will take precedence over a lower essential user.

CHAIR CAMPBELL: Is there an ideal spectrum that everybody wants?

MR. ROOT: Um.

CHAIR CAMPBELL: Or, does it depend on what we're –

MR. ROOT: It depends on what the mission is. It really it depends on what the mission is. Spectrum has achieved saturation in many urban areas. To address this over the years, the government has – got a couple of issues; one is to allocate additional spectrum. In 1998 the FCC allocated an additional 24 MHz, which happens to have doubled the allocations in public safety, state and local has, at 700 MHz.. However, that is a reallocation of broadcast television and there are currently broadcast TV. Transmitters on that air now. Hence, we block in all of the urban areas of California. The earliest we could conceive of relief would be 2007, but to achieve that, digital television sets need to be in 85% of the homes in a particular given market area. We have not seen those sales taking off and so that 85% threshold as currently in the FCC ratings probably will not be met until much later. This new spectrum mandates the use of digital technologies as a very spectrum efficient technology, much like the conversion from analog to digital cell phones. Within that 24 mhz., the state has an exclusive 10% of that for their use, and of the other remaining spectrum, 2.6 mhz. was dedicated for interoperability. That creates 64 new interoperability channels. The utilization of that is done through 55 planning regions at the Federal Communications conditions to set up around the country.

The SAP shows the areas that we currently have TV. stations on in the state. As you can see, the entire fire area is blocked, so this is not an area that we can achieve, as is again, San Francisco, Sacramento, the major metropolitan areas of the state. If we wanted to build (**unintelligible**) in Fresno or Redding, we could do so right today.

Last year the FCC allocated an additional 50-mhz. spectrum up again the microwave bands at 4.9 gigahurtz from 49 40-mhz. band as for wireless data applications. This is much like the computer users today with their (**unintelligible**) applications, take your lap top around, wireless connectivity, that sort of thing. But as an exclusive public safety allocation, the technology standards are undeveloped currently. It will probably be another 18 months before we start seeing product on the street. Useable range of these frequencies is anywhere from 100 meters to a half a kilometer in open space. So these are very small pockets of activity, but this will allow us space to do things like potentially infrared flying of mapping of a fire line and meeting a signal with the data back to fire camp or those types of air-ground applications. The wireless data networks in a fire camp or in a disastrous site and also very much increase the ability to do mobile data statewide where we can do resource (**unintelligible**) as it moves around the state.

Another solution the FCC started back in 1992 has become known as refarming the existing spectrum. Radio signals take a particular space. It's called bandwidth. The FCC decided they wanted to reduce the occupied bandwidth of radio signals and increase the number of spaces four times to be able to repack what we currently use. Our existing technologies that we've used, what's known as analog radio, is good for about two times the existing space we've got. A much narrower than that, we have to go to digital technology. The FCC is also adding additional frequencies in between the existing pre-1992 channels, the federal agencies have also being going through this initiative. The federal agencies are all converting by January 1st of next year. A number of the federal agencies have gone straight through digital to do that conversion. The FCC, however, has given the non-federal agencies, state and local government until January 1st of 2018, to do that conversion. One of the problems we have is many of the existing radios that are currently out there in large systems and a lot of the small districts will not accommodate the newer technologies and have to be replaced to achieve this new spectrum.

The next slide gives you just a visual picturization of what we're talking about here. The top line is the existing older analog technologies where the humps are individual frequencies and you can see where

the signals overlap in a channeling plan. The center line is kind of the state we are in the middle of transition of now as a narrow band analog signal still overlaps, but if we end up with a digital signal on the bottom line, we can end up with four times the number of musical signals in a given area.

Moving on to interoperability.

The public safety industry, the Association of Public Safety Communications officials, International Association of Fire Chiefs, International Association of Chiefs of Police, the Public Safety Wireless Network, Savecom Project, all define interoperability basically as the ability of public safety and service and support providers to talk with each other via voice and data on demand in real time, when needed, when authorized; not the ability of everyone to talk to everyone all of the time.

There are three kinds of interoperability. Day-to-day operations: Two adjacent police departments need to work on a border issue, a traffic accident or two different sides of a large warehouse investigating a burglar alarm. Task force operations: A planned event; The Democratic National Convention; The Superbowl; where there is a communications plan everyone knows in advance what they are doing. They may come from different disciplines, they may come from different radio spectrums, but there is a plan, they all have a need to communicate with each other at that venue. And then major emergency operations where the planning goes into an ad hoc (**unintelligible**) two part and deal with what you've got at the time and make it all work.

There are six recognized levels of interoperability. How to achieve them. Levels 1 through 3 in the field being **slock radiance**.. My radio system is not compatible with your radio system, so we exchange radiance. Level 2, program each other's channels in our radios. Level 3, come up with a state dedicated mutual aid channel. Level 4, we are referring to at the state as tactical audio switching. This is using dispatch consoles to patch two separate radio channels together.

CHAIR CAMPBELL: Is this the black box?

MR. ROOT: The black boxes. That's exactly what that one is. That's black boxes, cross band **(unintelligible**) taking UHF and patching it to VHF.

CHAIR CAMPBELL: (**Unintelligible**) and it can cure diseases?

MR. ROOT: No, we haven't quite got that one done yet. Fifth level, system specific roaming. In trunked radio systems. I have a radio in my system. My neighbor has a system. My radio is recognized in

their system as a user, so I can roam into their area. And then the sixth level standards based, which would be that my radio is good anywhere in a system that meets that standard.

CHAIR CAMPBELL: Do we achieve that in certain areas.

MR. ROOT: Not yet. We're working on it.

CHAIR CAMPBELL: That's the goal.

MR. ROOT: Ultimately that would be the goal. Some challenges. Currently today we've got incompatible and aging equipment. There's limited and fragmented funding out there, especially with the state budget situation to upgrade. Just as a note, the Federal Government is providing all sorts of grants for interoperability to buy equipment, but not to go through the planning and coordination process to achieve what it is that we need to do to buy equipment to meet.

The next item is that planning and coordination. The fragmented spectrum. We don't have everything in one place. And then technical standards. Channel names. I may call a particular frequency CLEMARS. Another agency might refer to it as **Alamay**. We show up as a scene of action and I say go to CLEMARS and that particular officer says, I don't have CLE MARS in my radio, I've got Alamay. Also we know what the individual frequency number is, we don't know that we've got interoperability. Operations protocols, both technical and as far as what type of a mission to be used on a particular frequency and also how to use a particular interoperability system. **(Unintelligible**) the line staff knows it's there and how to use it and when to use it.

Limited overview of what we've done to date after the last 40 or so years in California. Next. We have a number of field level mutual wave radio systems. The law enforcement arena since the mid-1960's we've developed CLEMARS. The California Law Enforcement Mutual Aid Radio System. Right now, that's 12 channels in all of the public safety bands around the state. Common frequencies in each of those bands. In the fire service, that's about the same time in the late 1960's there are two sets, there are the light fire channels in VHF high and since the 1970's the Fire Scope Communications Specialist Group has developed a communications plan. Recognizing in the early '80's that interdiscipline coordination needed to take place, in 1984, the Office of Emergency Services created CALCORD. The California On Scene Emergency Communications System. A single frequency that is coordinated for interdiscipline use at the scene of a major event. With the release of 800 spectrum in the late 1980's, the FCC created internationally

five channels for interoperability use. The international calling and four international tactical channels. In 2001, the FCC as part of the reframing carved out new interoperability channels in the VHF and UHF (**unintelligible**).

Looking particularly at fire service interoperability, again the three wide fire frequencies, those are FCC designated nationally for inter-agency fire use in California. The California Fire Chiefs Association adopted the operating protocols, Office of Emergency Services is the gentle enforcer as far as guiding agents, peer pressure on proper utilization of those channels. Fire Scope has developed and is part of the ICS 420 field operations guide that those wild land fire fighters carry in Appendix A lists communications policies and standard frequency lists and also mentions that we have an 800 fire channel specifically for fire interoperability and 800. RVAT is that we have a recommended 32 channel plan for strike team leaders and suggested for all agents to carry as far as standard frequencies to use.

This map shows the predominance of fire agency radio systems in the state, light, the background is VHF high. The 150 (unintelligible) band. (**Unintelligible**) majority of fire agency systems in both state, local and federal are all in VHF high. In the urbanized areas, by and large where local needs have dictated large agency operations to be on other bands, the fire apparatus still carry a VHF radio. The green indicates 800 systems, the gold indicates UHF systems. Where we have Orange County, L.A. City and it's hard to see, but San Francisco is the other solid green dot, the command and many interface rigs have VHF radios, but not every line piece of apparatus.

Another problem to interoperability is geography. By geography in Southern California here, we have kind of a natural radio base. The mountains create a bowl and routinely VHF frequencies will travel the distance 200 miles across that bowl. In the 1960's, I was a young lad in San Diego on top of Pt. Loma, I would routinely listen to Santa Barbara PD coming in across the water. (**Unintelligible**) PD channel but from Santa Barbara, just day-to-day operations. Likewise in the 1980's the earliest staff in downtown Los Angeles could listen to San Diego PD's operations coming off of the mountain tops in San Diego. This has been a problem in some fires in the L.A. areas where Mexican interference coming across the border has greatly impacted operations on this side of the fire – of the operation.

CHAIR CAMPBELL: I know that one time I was in San Diego and we used my cell phone and unfortunately it went through Tijuana and I got a horrendous bill from AT&T. I'm very disgusted with AT&T.

MR. ROOT: And unfortunately, the international border does not cut off radio signals as you have found and likewise the same spectrum is mirrored in Mexico and they have as much a right to be there as we do. But an issue is that there are incompatible uses on each side of the border. The issues that our staff has heard, next slide, the fire scene. I think I heard last meeting, but also we've heard directly the coordination between some of the incident command posts on the major fires and the local public safety answering points and emergency operation centers was poor affecting resource management at the dispatch centers and at the county levels. Other information we have had from some communications unit leaders reported that individuals who were certified as being incident dispatchers arrived in fire camp and they had never seen a radio.

CHAIR CAMPBELL: That made it a little difficult.

MR. ROOT: It certainly does. Some communications unit leaders reportedly were going to use 150 mhz. only (**unintelligible**) in areas that were like San Diego and San Bernardino, they had a lot of the 100 meg. resources to bear and would not accept the suggestion that they could include working divisions working on 800 as part of the incident and also even bringing 800 communications capability into the command post.

At the same time, some of those 800 MHz primary departments did not remember that they had 150 mhz. capability and uses. Some agencies that have 150 mhz. radios still on their rigs don't have the standard load programmed into them and there is an inability with the plethora of different types of equipment out there to program additional channels as additional channels were deployed into an agency's organic handheld mobile radios.

Efforts we're doing in the state to improve interoperability. As Dallas discussed, we have the Public Safety and Radio's Strategic Planning Committee chartered by the legislature convened last year, it's task to develop a program for state agency communications modernization and to break down the stove pipes between state agencies and state and local governments.

CHAIR CAMPBELL: Don, if I can interrupt at this appropriate time. Senator Bruce McPhearson who chairs the Senate Public Safety Committee has issued, and I direct my attention now to the members of the commission, that there's a three-page article, or letter, from Senator McPhearson listing some of the hearings that they've held and their recommendations and I would direct your attention to that at this time because some of those recommendations that they've been discussing for the last year were very appropriate to today's hearing.

(UNIDENTIFIED MALE SPEAKER): Senator Campbell, I did testify before the Senator's hearings and we've been working very closely together with them.

CHAIR CAMPBELL: Let me ask this question. Here's the problem as I understand it. You have a major fire and you have all sorts of agencies involved. You have the fire departments from the federal, the state, the local, the district and then you have the law enforcement agencies all from the Highway Patrol, the Sheriff, the local police departments and then you have the utilities involved, you have Cal Trans involved, you have the paramedics involved, you have all these different areas and I know I've left out about 20 different agencies and what we're trying to do is figure out how we can communicate, the command in control can communicate with all of those people, and that's I think for the benefit of the public. That's what we're trying to find out here today. Excuse me. (**Unintelligible**)

(UNIDENTIFIED MALE SPEAKER): I have just a couple of quick questions.

CHAIR CAMPBELL: Sure.

(UNIDENTIFIED MALE SPEAKER): In early 1970 there was a Deputy Sheriff and we worked on the Laguna fire, which was a sizeable fire and I heard many of the same complaints, many of the same problems. So what I want to know, is who had the responsibility (that was some 30 some years ago), who had the responsibility to bring us all together and get this straightened out over the past 30 years, because that was a problem them. Right now the Highway Patrol cannot communicate with the local police as they change, sometimes they swap (**unintelligible**) likewise with the Sheriff's Departments (**unintelligible**) existed in **(unintelligible**) during the El Nino floods several years ago, it's existed in all the earthquakes. The question is that every time there's a major catastrophe, I hear the same basic problem and basic plans that we're going to do, so the question is, who's had this responsibility over this long period of time and

why has nothing substantial happened? When I was a young deputy sheriff we're using (**unintelligible**) channel and all that. What has happened? Why hasn't anything been done with the exception of talk?

CHAIR CAMPBELL: Jay, let me take this out. The answer is probably up to the last few years is nobody. And the reason for that is you have a wide variety of agencies involved. You have local government involved. You have special districts involved. You have the state, county, federal, different departments at the federal level, different departments at the state level, different departments – and they all have their own agenda and in the past, they have all developed their own communications systems, and they paid a lot of money for those communication systems and I think until the Public Safety and Radio Strategic Planning Committee got developed last year, we haven't had the kind of direction toward interoperability until just now. And I think one of the things, and if we can take anything away from the fires, if there's anything useful for a tragedy like the fires we experienced here in Southern California, it's that we finally have the attention not only of the elected officials, but also of the general public and the need to do something to ensure that nothing like this happens in the future. So, I think my answer would be, and I can tell you I have chaired a number of hearings; I've chaired for 16 years during the legislative committee on fire, police emergency disaster services, and this has been an issue that I've held hearings on but because of the complexity of it, of getting everybody together and the finances involved, because some of your local governments do not have the money with which to participate, some of the counties don't, the state doesn't necessarily have funds for this, but I think we now see money coming from the Federal Government for which we're grateful, as can help out in some of these situations, so I think I would answer Jay that we haven't had anybody in charge of this up until the legislature established the Public Safety Radio Strategic Planning Committee and I'm grateful for the legislature for doing that. Do you disagree Dallas or Don?

MR. ROOT: No, I think that's a very good summation and one of the problems we have throughout California on disasters is our memory seems to be somewhat short and the funding that is necessary to provide some of the equipment, some of the training and planning, wanes as we get further away from these disasters and we did mention that training and exercising are critically important because when we get into multi-agency, multi-jurisdictional events, then it's critically important, they've worked together in the past and they know what frequencies they will be using. If you think about it, we have major

fires in California every year and we do quite well on major fires in the wilderness and putting in a (**unintelligible**) and the agencies work together quite well. It's when you have multiple events of that kind, then we really have some breakdowns. Generally though, they seem to be quite localized and sometimes, for example, San Diego has passed a bond measure to put in their 800 trunk system and just by itself, became totally overloaded and so what it was, is they designed for an event, but the event that happened far exceeded the ability of that system for their demands that were put on it. Now it's a learning experience, they can go back and do some fixes, and of course we had other problems in San Diego with some of the interoperability. The Mutual Aid Plan of California requires 32 programmable radios with strike team leaders. Some of the agencies when they've gone to 800 MHz, they VHF radios get old, so rather than replacing them, they don't, and so you lack that interconnection that is supposedly built into the system. Now those are local government issues and you know, something is always dependent on the budget and many, many factors. When you work your way up, the state's systems are antiquated. The CHP is on low band. They've put a program together, it takes six million dollars to replace and – just for state agency now, that was of course pretty much scraped because of the.

(UNIDENTIFIED MALE SPEAKER): (**Unintelligible)**

MR. ROOT: There's many factors. The other is we apparently lack a single group of responsibility to make sure that the follow up happens on some of these issues and that they be, I think where you're going (**unintelligible).**

CHAIR CAMPBELL: The one thing my friend in the center left out as a matter of priority is established in the right order, and this is from local government all the way up to the state, we've got a problem of not scratching something until it itched and we could get it out of our minds so we let the fire and police, their technology wane in the years and then we try to scramble in the field once something's going on we find out that we don't have it and what worries me about this in particular when I come back and look at my history (**unintelligible**) is that are we going to forget again, because I wonder after the Laguna fire are we going to do anything about this because it was out of sight and was out of mind perhaps. Perhaps we didn't set our priorities. I would think one thing this commission would need to do is to make sure that it continues to itch so it could scratch and the priorities were changed when we started taking care of these things.

MR. ROOT: (**Unintelligible**) dismissed in the comment. We've got a tremendous amount of funds coming into the State of California on (**unintelligible**), but it's coming in to be spent without a plan and that's very bothersome to me in that we have this overriding need for a global plan to support that and yet it's really going out to both state and local government agencies with no overall plan as to how they will eventually plug together and that's something I believe we can all work together to solve.

CHAIR CAMPBELL: This problem has been around a long time, because as you said when you were a "young" deputy [laughter] long time ago.

[Laughter]

SENATOR SOTO: I think Mr. Chairman one of the things that I have experienced, as you know I've been involved in community activities for a long, long time and some of the things that I (**unintelligible**) and think has gone on for a long time is that you meet, talk to people, everybody has a lot of good ideas, and then they fall by the wayside and nothing gets done. It's an exercise of futility that we come up with these great ideas and things we're supposed to do and one of the things that I would hope we would commend is that there is a follow up committee, knowing that some of these things that the recommendations are being made and the things that we must do, we will do, otherwise, we are just going to wind up in another exercise of futility, neither of following up and I don't know whether it's maybe a good idea to appoint, once we're done with our recommendations, to appoint a smaller committee to make sure that these recommendations are being followed and that we don't fall into the same bag again as we always do when we have these grandiose meetings and people come and we all make recommendations and then nothing happens and I'm sure your familiar with that. So, I would like to make sure that we don't sit here meeting after meeting, come up with some ideas and recommendations and let them go by the wayside. I want to make sure that there is a follow up of some kind of a monitoring system, or something that we could say, okay those things are going to get done and we want to get a report on it and I don't know how that would happen Mr. Chairman, but I think we ought to consider…

MR. CHAIRMAN: Let me make a recommendation Senator Soto. Your point is well taken. Many of the reports that we have issued have gathered dust on the shelves somewhere. I don't think this is going to happen to this (**unintelligible**).

SENATOR SOTO: I hope not.

(**UNIDENTIFIED MALE SPEAKER**): Further, and one of the reasons is because we have so many elected officials here. Not only starting at the federal level, the state level and at the local government to city and county levels. One of the things that many of our recommendations will require is legislation and some at the state level, maybe some at the federal level and some at the local level and I think we have enough members of the legislature on this committee that each of you will have the opportunity for carrying a piece of legislation as it relates to this commission.

[End of Side A, Tape 1]

MR. CHAIRMAN: …easiest ones to solve and true interoperability really comes with organizational and process and procedural changes that we need to probably concentrate on.

(**UNIDENTIFIED MALE SPEAKER**): That's a good point. Thank you.

(**UNIDENTIFIED MALE SPEAKER**): Mr. Chairman, I'd like to ask a question. I'm intrigued by Mr. McPherson's letter on the second page, but before I say that, the last comment is very pertinent to funding issues if legislation should require interoperability with technological changes and equipment. It would be very costly and I understand what you said Mr. Jones earlier about the cost of agencies defaulting to their BLF level equipment. In Mr. McPherson's letter he said under item 1, "we must move toward interoperability using a standard based approach", and he calls it one of the most critical points of contention, it's exactly what interoperability means and then he says, "somewhat suggests that interoperability can be achieved on an as-needed basis during a disaster or other major crisis by bringing in a gateway or black box", which was spoken of earlier. "This device allows incompatible users to communicate with each other", and he points out the drawback being that there's a critical moment issue of getting it in place and it also ignores the fact that interoperability is needed by public safety agencies for routine day-to-day coordination, as well as emergency responses, but throws it right back into, let's use our own equipment. The black box idea though, the gateway, does allow, as I understand it, the opportunity for agencies to have interoperability in emergencies and mutual aid. Is that correct?

MR. ROOT: Well the black box technology, you physically put up to six different radios into the black box and then it allows them to cross-top. It does have limitations and it does require a certain amount of sophistication for the operator and so, it's not as simple as just the technology. One of the suggestions that we have made some time back as a short-term type fix would be to provide a black box in each

operational area of the State of California as part of the terrorist response plan and that would be a – I think as Don is indicating, we do have some additional recommendations, but we look at this as both a short and a longer term strategy because as these systems become replaced, we would like to see all of the systems go into a certain direction for the state's overall good, now that may take 20 or 30 years, but yes, we believe that is a part…

(**UNIDENTIFIED MALE SPEAKER**): I think the point is that this is a long-range plan.

MR. ROOT: Yes.

CHAIR CAMPBELL: The interoperability is not going to happen overnight, but at least if we can get everybody working together and aiming in the same direction, then I think that's what Senator McPherson was also talking about. So, Don, do you want to finish your…

MR. ROOT: Thank you Senator. As I was saying about the Strategic Planning Committee, it was chartered to look at the state agency needs in dealing with both our federal and our local partners and with each other and at the first meeting the members of the committee elected by Director Dallas Jones here to be the chair of the committee.

The members of that committee's departments are the California Highway Patrol, Highway Corrections, Department of Fish and Game, Forestry, (**unintelligible**) General Services Telecommunications Division, Department of Justice, Parks and Recreations, Cal Trans, Department of Water Resources, Youth Authority, (**unintelligible**) Authority and OVS.

Looking at the larger issue, however, on a national level, when the FCC allocated the new 700-mhz. spectrum and that 2.3 megs of interoperability real estate the FCC called for the states to create interoperability executive committee to manage that spectrum.

CHAIR CAMPBELL: What year was that?

MR. ROOT: That was – actually that was 2001.

CHAIR CAMPBELL: Well we've been working on this directly for two years.

MR. ROOT: Yes. If the state did not take that charge, then the regional planning processes that exist with local and state agencies would then manage it in the confides of the 55 planning regions. There are two planning regions in California by the way. North and South

(**UNIDENTIFIED MALE SPEAKER**): North and South.

MR. ROOT: We established in California, the California State wide interoperability executive committee last year under our existing authorities under the Emergency Services Act and it is in the process of formation and we are not just looking at the 700 mhz. spectrum, but we are looking at this problem totally, (**unintelligible**) and brining in the law enforcement CLEMARS, the fire, the interdiscipline frequencies and just developing the whole thing as a total interoperability problem in California across all radio and bands.

Our goals of 30 plus member executive committee representing tribal, local, state and federal public safety players and all disciplines, both operations, administration and technical staffs. The initial meeting happened in the middle of the firestorms in Sacramento on October 30th and one of the main goals we're looking to do is to develop, promulgate and maintain a comprehensive interoperability communications plan and ultimately a system for California. At that first meeting, we established 10 working groups.

Looking at the membership makeup, we have invited California State Sheriff's Association, Police Chief's Association, FIRESCOPE, California Fire Chiefs, The League of California Cities, The State Association of Counties. The Association of Public Safety Communications Officials 2 Chapters in California; the 700 meg planning regions; the two 800 mhz. planning regions, American Red Cross, Tribal Nations, special districts and just to ensure some good geographical in addition to overall discipline representation some members at large where we have areas of the state that are not represented by one of the other existing disciplines.

CHAIR CAMPBELL: That's a large commission, almost as large as Blue Ribbon Commission. How are they coming along?

MR. ROOT: We've got identified about half the membership so far.

CHAIR CAMPBELL: Okay.

MR. ROOT: We've had one meeting. We've been a little overcome by events since then as far as getting other things going.

(**UNIDENTIFIED SPEAKER**): And who's the chairman of the committee?

MR. ROOT: The chairman of the committee is John Powell, retired from U.C. Berkley PD and a nationally recognized expert on interoperability and I serve as the executive secretary. As far as state

agencies, we have state law enforcement, CHP and DOJ, state fire, the MS authority, Department of Water Resources, Cal Trans. We've invited the federal government to appoint a representative of the Federal Law Enforcement Agency. We've invited several fire to appoint representatives and we have a representative from Department of Homeland Security.

(**UNIDENTIFIED SPEAKER**): And you hold your meetings in Arco Arena?

[Laughter]

MR. ROOT: Actually the new OES Headquarters. The ten working groups established and starting to form law enforcement is a discipline and that is superceding and encompassing the former CLE MARS executive committee. The fire and rescue working group we envision the fire scope communication specialist group to serve in that role addressing discipline specific issues. An EMS group and interdiscipline group, a working group looking at the black box technology governance and how to apply them and when to apply them. Next. Wireless data; how we make sure that as we implement for the 4.9 gig new wireless band that we maintain cohesive interoperability amongst all of the users. A database team so that we can stay on top of where everything is out there so that when we have to pick up and move to Humboldt all of a sudden, we know what the infrastructure is that's there and so that we don't overwhelm them with things that they can't use. Likewise when we're going to Humboldt for resources, we know what they have to bring to the party. A training committee; we have to figure out how to develop training materials for everything that comes out of this. A governance committee to basically manage the overall process and write the plan; and a working group addressing integration of non-governmental organizations into the whole thing, such as Red Cross and other service providers.

Moving on to recommendations. We feel that each piece of line fire apparatus in California should have a multi-mode VHF high band mobile radio installed and at least one handheld radio that is capable of being programmed in a fire incident base. Second, the federal partners as they are moving to their narrow band spectrum should continue to allow narrow band analog operations for the foreseeable future until digital communication systems are pervasive in state and local government agencies. That's going to be a multi-year effort. We're hearing that potentially as soon as 2006 or 2008, that they may be converting over to digital on the wild land fire frequencies.

The wild land ICS structure needs to become more tolerant of interface with state and local communication systems in these urban intermix areas. If you're burning the metal of New Mexico or Montana and it's purely brush, you're a stand-alone island, you're out in the middle of nowhere, but when you're coming into an existing integrated area, we've got to work together. We feel the communications coordination, not just wild land frequencies, but overall response coordination needs to be implemented earlier, maybe as soon as one red flag condition stand up, or when we break a second major incident within a given radius of an already working major incident where we can see that communications may become an issue.

We need to review the communication series of positions, radio operator incident communications attack, insta com manager, com unit leader, com coordinator, qualifications structure, to provide for trained radio operators and to recognize non-wild land incident experience for the purposes of maintaining of currency and certification staff. The existing system appears to only recognize wild land fire experience for certification, yet there are plenty of people out there who work in the urban search and rescue field, have worked major events, such as the Northridge earthquake, floods, that sort of thing where the same techniques are used and the same practices exist, but because it wasn't a wild land incident, it doesn't count for maintaining current status in the red card system.

A serious look should be taken at the look of potentially relocating the communications function from logistics over to operations within the incident command system. In the military model that ICS was patterned after, com resources are pretty much to be known when a military unit goes to the field, it knows what it's taking to the party. Before we get into these wildfire interagency mixed conditions and a number of agencies are bringing a number of resources to bear, it gets very dynamic and the communication section needs to be much closer tied to operations chief staff level so as to be better able to support them, to wherever we can get out ahead of the incidents and be ready for the fire to come burning to the structure rather than being chasing after and trying to fill in. You know, there went the fire, now let's get some communication structure in place to cover it.

SENATOR CAMPBELL: ICS referring to incident command system.

MR. ROOT: Yes. Next expand the OES fire radio network to allow better coordination between instant command posts and the urbanized operational area coordinators and the communication centers that

are dealing with the public. The fire system was built in the 1950's, there's been some sites added to the original design, but there are many areas of the state the network does not cover and does not have the depth of resources to be able to handle that kind of a traffic load.

The creation of a communications mutual aid function at OES to provide and coordinate resources, frequencies, radio caches, black box caches, repeaters, command post vehicles, satellite data systems, wireless network data, etc., and to coordinate the provisioning of a statewide mobile data backbone.

An augmentation to OES, SDF and the Department of General Services Telecommunications staffing to allow for adequate support to 24/7 to multiple incidents around the state. As we go through this whole budget process, everyone is having to do more with less in the staff resources area and particularly the Department of General Services has been hit with staff reductions because they perceived at state government as being a response agency, but they are very much the logistical arm that keeps us going as state agency systems and keeping all of this running.

Training: The firefighters, as was said earlier, are very well trained, but they need communications training. We need to work together interdisciplinary more and more and so that's just it, more training.

SENATOR HOLLINGSWORTH: Thank you Mr. Chairman, the question I have is these recommendations that you just gave us, are they going to be incorporated into the interoperability executive committee that now exists? Or are they just –

MR. ROOT: Some of them are things that we can do within the interoperability executive committee, but some of those are going to be policy issues that require funding and resource augmentation, such as getting additional portable radio caches to be able to manage straight to the field.

SENATOR HOLLINGSWORTH: I would assume that the finished product of the interoperability committee is going to require a lot of things, just as the finished product of this would on different levels, but so you're saying that some of them will, but – I guess what I'm saying is, how do we make these happen if the over arching interagency body that exists today is the executive committee to – if that's the over arching body to make sure that there is a plan on interoperability as Director Jones said was so needed, then how do these recommendations at OES has just given us today become part of that body's eventual outcome?

MR.ROOT: We believe most of them will. A few of them though will go, for example, the one we talked about the ICS system, that really the governing body is fire scope and that would be put over to their technical committee to see if it really fits into that.

SENATOR HOLLINGSWORTH: So some things can be done without the executive committee by OES (**unintelligible**)

MR. ROOT: Other things will have to go to the national level, like the National Wild land Fire Coordinating Group is actually going back and reviewing nationally the standards for the communications positions.

SENATOR HOLLINGSWORTH: It's at state, federal, local.

MR. ROOT: Exactly.

SENATOR HOLLINGSWORTH: …interagency commission and obviously this fire was a state, federal, locally fought. The next question I have, this executive committee was formed almost three years ago but it didn't have it's first meeting until October.

MR. ROOT: It first formed last year.

SENATOR HOLLINGSWORTH: Okay. When is it expected to finish it's work.

MR. ROOT: I hope that we'll have a first cut at a communications plan in about a year to 18 months as far as going back and updating the existing older plans that are there and developing guidelines for the new spectrum. The process, as far as maintenance, is going to be an ongoing process, but we hope to be able to bring to the California Executive Council a year to 18 months, a plan for consideration and adoption.

SENATOR HOLLINGSWORTH: How do we, and who makes sure that that gets done on that timeline and that then that plan is then implemented by the appropriate bodies? Is it the legislature?

MR. ROOT: Well, yes. Parts of it will obviously take legislation. I think we're a little bit mixing two different groups. The one's that dealing with federal issues and spectrum is a specialized group of technicians and they'll be doing a lot of the technical work. The **DeConno** Group will do the (**unintelligible**) brush planning in the same timeframe as is applicable, I believe to both.

SENATOR HOLLINGSWORTH: Okay, I can handle the DeConno Commission, the line of command on that. Ultimately, the legislature can hold that commission responsible for getting it's work

done and then look at it's recommendations and decide what to do through legislation funding and so on, but this one that is a mixture of state, local and federal, who is it accountable to actually finish it's work on time and then present it's final product for the policy makers to then implement?

MR. ROOT: We're accountable to the Director of OES.

SENATOR HOLLINGSWORTH: The executive committee?

MR. ROOT: The executive committee. And ultimately the FCC, but the FCC is not mandated to plan and I guess if you want to look at it that way, we're accountable to all of public safety in California.

SENATOR HOLLINGSWORTH: So that's a problem.

MR. ROOT: Yes.

SENATOR HOLLINGSWORTH: Everyone and no one at the same –

MR. ROOT: Exactly.

CHAIR CAMPBELL: Let me make an observation, we are way over time.

MR. ROOT: I'm sorry.

CHAIR CAMPBELL: No, it's all right. We are way over time and we've got a series of people that have to come on, if we can wrap this up Don as quickly as possible.

MR. ROOT: Let me real briefly run through just some high points in the three warning systems I have to cover and then..

CHAIR CAMPBELL: Thank you, I'd appreciate that.

MR. ROOT: Emergency Alert System: Just real briefly, there is a perception out there that public safety manages EAS. It does not. It is a federal program to allow the President to provide citizens emergency action notification. The FCC manages it in conjunction with the broadcasters who actually do the planning through a process. Federal messages are must carry. Local and state warning messages are optional by however the local plan takes place and public safety is just a client into the EAS for that state and local warning traffic. OES provides some state level support, including interface and education of the public safety community on that wall.

CHAIR CAMPBELL: So the FCC's tied up now in the Super bowl, so it'll take them a while to (**unintelligible)**.

MR. ROOT: There are 21 EAS areas in the state. For EAS to work, the public must be awake and have a radio or a TV. turned on to receive a message, so sending a warning at 2:00 a.m. on EAS when everyone's asleep most likely is not going to do a lot of good. There are special receivers that can be bought to either turn on your TV. or to monitor an EAS message or a message off (**unintelligible**) radio network.

CHAIR CAMPBELL: That was definitely one of the issues in this fire.

MR. ROOT: Yes.

CHAIR CAMPBELL: Notification.

MR. ROOT: So I just want to lay that one as a background since I know there's been a lot of consternation about that. Next, warning systems: The Emergency Digital Information Service. EDIS is a OES administered and operated text messaging network. It's an outgrowth of an after-action of the Loma **Prieta** earthquake. It operates on the World Wide Web via our oasis satellite network and via some terrestrial data radio broadcasts. It provides emergency public information distribution to the media and ultimately to the public in the form of an emergency news wire. It's ideal for the follow on messages behind the warning, where the shelters are and if it's safe to go back in, what to do with your animals that are displaced in the floods, that sort of thing. It also provides by being a text system, services for the hearing impaired and frequently can't hear an audible warning. Finally, next reverse 911 systems. The technology of being able to call people on the phone and warn them have been around for a while in various forms. It is really a technology that is now stable. It is able to compensate for transitory life in California with phone numbers that change on a regular basis by virtue of the fact that it uses 911 databases and therefore as they are kept up-to-date, it is kept up-to-date and the technologies now out there where wireless users cell phones can be warned in a given geographic area. There are some cons to it, however. Privacy issues is always a concern in California. The infrastructure is subject to failure during a telephone or a power outage such as if the provider who is trying to dial is outside of the area following an earthquake and the network is overloaded, they can't get their calls in either and areas in the case of wild land fire, if the fire has burned through the telephone infrastructure servicing the area you're trying to warn, it's not going to do any good.

So, just in summation, we've gone through the various things that we said we were going to do about communications interoperability and our recommendations in our discussion of warning systems and if there are any other questions, otherwise (**unintelligible**).

CHAIR CAMPBELL: Thank you very much.

(**UNIDENTIFIED FEMALE SPEAKER**): Mr. Chairman, just a real brief one, I promise.

CHAIR CAMPBELL: Go ahead.

(**UNIDENTIFIED FEMALE SPEAKER**): With all of the talk of interoperability, etc., I am aware that there is a spectrum encroachment problem, particularly our military people, the (**unintelligible**) have a problem because somebody inadvertently – not inadvertently, they did it on purpose, but sold off a large amount of spectrum to the commercial market and our insatiable demands for wireless cell phones, and etc., are sucking up what is left, leaving public safety and the military their width, their spectrum at risk. Is someone watching – I'm sorry our federal people aren't here. Is somebody keeping an eye on that in this group? Because all of the planning in the world won't help if we get into a situation where all of a sudden people are asked to move off or told to move off or it's sold. Plus the second thing is, there's a lot of existing spectrum out there that's owned by telecommunications companies that they're not using. They're sitting on it, and I think it's incumbent up public safety and some of the rest of us to work into that and get that reallocated. Is your group working those issues? Those are federal issues, but they're critical.

MR. ROOT: They're federal issues and while neither of these committees directly are working on that, the association, such as the Association of Public Safety Communications officials, International Association of Fire Chiefs, International Association of Police Chiefs, are all back lobbying Congress and lobbying the FCC to do the right thing and unfortunately with direction from Congress to the commission to help balance the budget, which is what's driving the sale of spectrum, sometimes we end up losing.

(**UNIDENTIFIED FEMALE SPEAKER**): Well it's too bad our federal people aren't here, but that should be a big part of the report.

CHAIR CAMPBELL: Thank you

MR. ROOT: As far as private sector, we've identified a number of areas that we believe we could partner with the private sector as it would be very advantageous to the state and local government regarding

our cell sites and a lot of the, not our cell sites, but repeater cites and many of the infrastructure that we have, we might be able to trade off services and gain in the overall. So, we're also looking at those issues.

CHAIR CAMPBELL: Thank you very much. Ladies and Gentleman, we've heard – this report was a lot more extensive and covered an awful lot of territory. For those who are coming up next, please remember the redundancy factor and if it's already been covered, we would request that you not cover it again, unless you have a different angle from which to approach it. So, my intent is to run through to 12:30, at which time we'll take a one-hour break for – actually I'm going to say a 50-minute break because I know it will take you an hour to get out and back anyway, so if you think it's only 50 minutes, we'll make sure we don't take more than one-hour. At 12:30 and go from 12:30 to 1:30 for lunch.

MAYOR VALLES: Mr. Chairman, if I may. Mayor Valles over here from San Bernardino.

CHAIR CAMPBELL: Oh, I'm sorry.

MAYOR VALLES: My questions is, that was a very interesting and informative power point that they presented. Will we be able to get a copy of it?

CHAIR CAMPBELL: Yes we will.

MAYOR VALLES: Thank you.

CHAIR CAMPBELL: Alright, thank you for the question. Alright, the next testimony will come from Mike **Wingate** and from Dennis **Holberg** from the U.S. Forest Service. Gentleman. By the way, Congresswoman Susan Davis has a representative here today on her behalf. And so, if you want to direct questions to Mike **Powell**, the Chairman of the FCC, she's the one to go through. Or you can go through his dad.

MR. WINGATE: Mr. Chairman and members of the commission. I'm Mike Wingate and my role with the U.S. Forest Service is the Regional Incident Communications Coordinator. I've got 36 years public safety experience and I've been in this position since 1984. As you've heard already, the role of communications is a lifeline for firefighters.

CHAIR CAMPBELL: Excuse me sir, would you pull the microphone up closer.

MR. WINGATE: Sorry.

CHAIR CAMPBELL: It's not you, it's my hearing is going, and I'll be one of those needing the (**unintelligible**).

MR. WINGATE: Modern radio technology is constantly evolving and new technologies come with a price. While 400 and 800 meg trunking systems are very efficient for the users, it creates a loss of interoperability between agencies. This happened in some of the areas during the October fires. Many years ago, as you heard, the Fire Scope Communications Specialist Group recommended some strategies in the VHF spectrum for strike team leaders and interagency operations. That area that happened during the fires worked well where those radios were in place – in the initial attack operations went well. Several areas that I am responsible for is the RICC, Regional Incident Communications Coordinator, for the federal response in fire communications, frequency management, communications equipment management and work force management and allocation. Also resolution of U.S./Mexico radio interference between the two countries. I represent the U.S. Forest Service on a mixed commission between Mexico and the United States that works on this, we've been working on this for a lot of years. Also, I implement an agreement between U.S. and Mexico on a group of frequencies that are listed in the memorandum of understanding that we use this primary fire fighting frequencies in the VHF spectrum. Mexico will shut down their users in their country if we request it. It sometimes takes 24-hours to 36-hours, but they will do that. Initially we place Federal Communications Coordinators at the Southern Operations Center, along with a CDF Communications Coordinator. I'm only going to go ahead and show the federal response to these incidents. I can't speak for the state and the local agencies. Communications equipment we implemented, we implemented to each fire one full communications system, it's command, tactical and logistical and aircrafts communication support. We also placed 25 command repeaters, 17 logistical repeaters, 25 aircraft bay stations, 435 kits of radios for a total of 6,980 handheld VHF radios. Also, we supplied 350,000.00 AA batteries to those radios for operations and over 1,550 seven half volt batteries which operated the aircraft bay stations and the repeaters.

(**UNIDENTIFIED MALE SPEAKER**): Do you use the rabbit?

MR. WINGATE: No. [Laughter]. In the area of work force management, we had through the normal dispatch process, we had 39 electronic technicians, state and federal. We had 25 communications unit leaders and trainees on the fires and we had four communications coordinators. One field, one at the coordination center, one aviation frequency coordinator and a border coordinator. I played the field in the border coordinator role because of my relationship with Mexico.

(**UNINTELLIGIBLE MALE SPEAKER**): What went right?

MR. WINGATE: I think the preplanning we've done in the past. We have at our national interagency fire center in Boise, Idaho. We have a full-time communications duty officer and in California for the federal government, we have a full-time duty officer, which happens to be myself. Also, our Fire Scope Communications Group, our VHF radio platform and our standard VHF (**unintelligible**) and the strike team leader preplan radio (**unintelligible**) went well for us in the areas they were used. Our availability of the national resource at (**unintelligible**) Fire Center, those assets were totally available. The region 5, southwest region assets, the communications equipment available to us, and also (**unintelligible**) assets through OES. There were four pre-position radio systems at Ontario, at our fire cache that immediately went to the initial fires. In California at any one time we have seven federal forest service owned systems and two nationally owned radio systems that are available pre-positioned throughout the state. They are available immediately. The rest of the systems came out of the fire center at Boise, Idaho. Additional equipment was available, but wasn't requested or needed. Additional things that went right, our Washington office Frequency Manager and Department of Agriculture, we provided additional VHF frequencies in the FM frequency range. It interfaced with the other agencies to get us those frequencies. We borrowed from other federal agencies between 162 and 174 mhz., which is where the federal allocations live, there's only 480 channels available and some of those are obligated to NOAH weather and some other special water uses. We hit 27% of the federal spectrum allocation placed on these fires. That's from other government agencies.

ASSEMBLYWOMAN KEHOE: Thank you Mr. Chairman. I'm trying to cut through some of the technical lingo, which I don't fully understand. We heard at another meeting that firefighters in San Diego County, their hand-held radios and things were overloaded. Everybody was trying to talk at the same time and they had to wait and things like that, and I know that you're only talking about your federal operation. But all this equipment that you get out there to your firefighters in the amount of frequencies you had available and the batteries and the handheld radios and all that, how much of that worked the way you wanted it to work when the fires were burning most intensely?

MR. WINGATE: After the equipment was installed, we had very few failures. We had no system, major system failures in the new equipment we put out on the fires.

ASSEMBLYWOMAN KEHOE: So firefighters on your frequency using your equipment were able to..

MR. WINGATE: Were able to communicate amongst each other.

ASSEMBLYWOMAN KEHOE: Good, all right.

MR. CAINE: I have a quick question if you don't mind. Representing Senator Brulte's office. On your equipment it worked well. I understand that. How well trained though were local people when your equipment was put in their hands? Did they know what to do? Do they know how to handle it? Were they properly trained?

MR. WINGATE: The equipment we used is kind of a standard piece of equipment used by most firefighters in California. The Park Foresters, fire protection, other agencies that have this VHF radio (**unintelligible**) was our primary radio. Additionally, we did on-the-spot training sessions with those people that did not understand the usage and explained to them where the frequencies were located on the radio and in where they lived within the communications plan.

MR. CAINE: It worked?

MR. WINGATE: And it worked well. Even the Federal Communications Commission provided us additional assets, but prior to the time we were installing our equipment, the FCC loaned us their communications repeater (**unintelligible**) for some temporary communications. Mexico on the interference. Mexico voluntarily restricted the use of the U.S./Mexico Memorandum understanding frequencies without even having a request from us, which is a first.

One of the traditional problems we have had between fires and (**unintelligible**), it was interference between other fires. In this situation, because we compartmentalized and dedicated frequencies, discreet frequencies to each fire, we had very little or no interference between the fires. Everyone was on their own channel, own tactical channels, command channels and it worked well.

The other things that went right, aviation frequencies were available. The FAA went and built special frequency allocations and shut down some of their terminal operations and gave us their AM frequencies that we could use in the aircraft arena. Also, I'd like to say the repositioning of the resources and time of year, six weeks earlier, communications assets would have been limited due to other fire activity.

MR. CAINE: What went wrong?

MR. WINGATE: We had some slow delivery of assets. When the ordering, and especially in the San Diego area, at the command center in Monte Vista, a lot of equipment bottlenecked due to the expanded dispatch issues. It was a training issue for the people that expanded dispatch. They did not understand what a kit of command tactical radios were. They didn't understand the terminology and things bottlenecked and orders got stuck 15 hours behind the power curve there. Additional personnel were brought in to assist that management unit and the fire started moving real quick after that.

MR. CAINE: Excuse me. Can I ask you – would you tell us regionally which fires you're speaking of where you have these deficits in the program. What you invited. There were many fires, I'd like (**unintelligible**).

MR. WINGATE: The slow delivery of assets were a problem for everyone (**unintelligible)**

MR. CAINE: Some radios are working now.

MR. WINGATE: Oh, not mine.

CHAIR CAMPBELL: If we could please turn off the cell phones. Thank you, and the pagers.

MR. WINGATE: The communications assets, the delivery of them became a problem because they got caught in the –

[Laughter]

MR. WINGATE: -- in the shear volume of the things being delivered to the fires, they weren't given a prior as they should have been. San Diego was a problem getting equipment delivered and implemented and the implementation process we had was the ability to get to the mountain tops to put up the communications repeaters, they had limited access to helicopter flight time to fly and find a good mountain top to install a radio. There was active fire at the planned communication sites, so you couldn't put it in, and also the growth of these fires exceeded the ability to implement the plan. As you develop the plan, the fire has already gone beyond the area you needed to provide technical coverage at.

CHAIR CAMPBELL: David, at lunchtime I'm going to give you a new definition of quick question.

MR. WINGATE: One of the other issues we had was a delay from the Washington office getting additional FM frequencies. Our frequency manager had no ability to contact other government frequency

managers over the weekend. We were given some frequencies by our frequency manager as he looked in the government master file and saw there were no allocations in San Diego, L.A. area and said I'll work with those people on Monday and cure the problem.

CHAIR CAMPBELL: So the obvious solution to that is not a lot of fire to burn on the weekend.

MR. WINGATE: Right. We did have some interference from Mexico on some of the frequencies the other agencies loaned us in the air operations arena. When we discovered that, those were made into ground tacticals shaded to Mexico and they worked fine and we allocated other FM frequencies to the aircraft. Double AA batteries had a two-hour life sometimes and of course some agencies didn't have the recommended communications plan in their vehicles.

I think one of the things that worked well is we used a standard VHF radio platform. We compartmentalized each incident, give them discreet frequencies to operate on. We supplied them full range of equipment they needed. We didn't change anything we do operationally, whether it's a 5,000 acre fire or a 50,000 acre fire, in the communications arena you just develop the larger communication system to support that operation. So, it wasn't something new that they had to do, it was something they already had used and done every time. And one of the key things that we had, was we were able to adapt our equipment to changing needs where we could take (**unintelligible**) repeater at one end of the fire and link it to another repeater and then add an additional repeater for an overall communications command net and that, and the frequency agility of our radios where you could program any frequency in the radios was key also.

I have some recommendations.

CHAIR CAMPBELL: All right.

MR. WINGATE: One of the things that we want to do for the future is ensure that engine crews and chief officers have the ability to communicate effectively across their lines. The other thing I'd like to see with the working groups is to work with the vendors and develop a new generation of software defined radio with law enforcement and fire. Software defined radio should be on the street next year according to the vendors. A preliminary prototype. The software defines the parameters, the technical protocols of the radio, so the RF portion of it, radio frequency portion can go from 30 to 800 mhz. and talk on a Motorola system or a Johnson system, or whosever radio's trunking system, and also in the VHF equipment that other people used to turn a switch, it defines the parameters of the radio.

CHAIR CAMPBELL: Assemblyman LaSore has a question. Oh sorry. No, go ahead.

MR. WINGATE: I'd like to see a tasking of the Fire Scope Communications Specialist Group to develop a short and long range strategy for this interoperability. The Fire Scope Group for years, since it was formed in the '70's have developed action plans and implementation of these action plans to the Fire Scope Board of Directors that have helped the fire service communications. These radio systems that we're using now in the '70's, did not even exist in 1976, when I was doing fires as a communications officer, we had 12 radio systems nationally. Now we can field 85 systems and additional equipment. The sure volume of equipment available to us in an emergency in the Fire Scope Group is an excellent point for that.

CHAIR CAMPBELL: Chief Freeman from L.A. is the representative for Fire Scope on our commission. (**Unintelligible**) which I think I carry most of the legislation on. So we're partial to fires.

MR. WINGATE: Okay. I'm almost finished here. One of the other things that I think needs to happen is operations personnel need to be more proactive in the development of their agency communication systems. In looking and defining, because a sales engineer from Motorola or General Electrics, or someone comes in and says, this is the best thing since sliced bread, you really need to look and say, is this really going to help me extinguish fires, save lives and property and how much of the capability will I use. You know there is a lot of money spent on communication systems that they're using. I equate it to the modern TV., you know, with the remote. We really need about 9 buttons instead of 50 buttons. You know, we don't use all of those buttons on the radio.

CHAIR CAMPBELL: In addition, sliced bread is not on the Akins Diet.

[Laughter]

MR. WINGATE: Also, I have one final thought here. Until we develop a radio that transcends all platforms and network protocols, we will be doing business as usual, we'll be using the VHF radio platform, forensics communications support because it's the least common denominator in the fire service communications. We fall back on that and it works.

CHAIR CAMPBELL: But there is a bright light in the future, right?

MR. WINGATE: There is.

CHAIR CAMPBELL: Thank you. Yes sir.

MR. HOLBERT: My name is Dennis Holbert and I'm the Regional Aviation Officer here in California for the U.S. Forest Service and I've been here for over 30 years, most of it in aviation. And for the record, I've handed three things out; one of them is a Memorandum of Understanding Between the U.S. Forest Service and the Department of Defense and so I know its been an issue with how we interact with the military and I handed that out in hopes that it will help the group better understand how we enact them and how we work with each other.

CHAIR CAMPBELL: Let me ask you one question. There are a lot of private helicopters.

MR. HOLBERT: Yes sir.

CHAIR CAMPBELL: That are used not necessarily for transportation of people or equipment. Have we ever thought about training some of those private sector pilots that when we have a situation that we could call on some of those to come in and help out.

MR. HOLBERT: We have a very active program doing that right now in California alone. My staff has over 300 pilots certified to go out and fly helicopters.

CHAIR CAMPBELL: Private pilots.

MR. HOLBERT: Private pilots and we call it the call-when-needed program and it's extensive throughout the U.S.

CHAIR CAMPBELL: And using their own equipment?

MR. HOLBERT: Yes. I also handed out two pamphlets of a couple efforts that we're presently working on here in California with the U.S. Forest Service on some of the things I want to talk about. I believe that we have a real common goal and need here, and after listening to this group and some of the other things, I too have the same objective, or I should say that the agencies do, and I believe I speak for all the fire agencies in this. We really have a need to have a downlink – real time downlink information. From the Cedar fire on down as we all know that there's a need to know what's going on at all times where that fire's headed and what it's doing. And that's our objective and it is obvious from listening to this group at the last time that you folks recognize that. We have the objective within the Forest Service and I believe I'm speaking for the other fire agencies to move this information and what I'm talking about is a digital picture, a map, an accurate, accountability of what the fire is doing and basically to three places we would like to move that information to the incident command, the decision makers. We would like to move that

information to the Internet, so for public safety and all those other issues, so they have access to that, and also we'd like to move that information to the firefighter on the ground. And I envision to technology some day that you'll pull out your palm pilot and look at it and see where the fire's going. That's our goal. With that, we've made several attempts within the agency to do that and there's been a couple of barriers. One of them is the cost. It is extremely expensive. And the other one is the technology. I've had several people come through my office to sell us things. We've tried several venues. I can speak for the state, they've tried some things. L.A. County has done some things and the jury is still out on the best way to move information from the air to the ground. It all has to do with the size and the amount of information and the accuracy of that and I couldn't sit here and give expert on that. I've received a million presentations and I'm about as confused as you are with the radio stuff. But we've got a ways to go in dealing with that.

CHAIR CAMPBELL: Is the incident commander – Is commanding control in charge of the aviation, or do you have a separate offer, or separate site that does the aviation aspect of the firefighting?

MR. HOLBERT: Under the incident command system, it is under the command of the incident commander. My role as regional is to support that as a manager, so it's within the organizational ICS structure; incident command system to manage the aviation.

So, within California we have a very extensive in both interagency program call air tact group supervisor. The state has in some of our counties in the forest service is bar none the best trained in the world and we actively send up aircraft to be, for a common term, eyes in the sky, and with that, there's a program – the Forest Service now contracts those aircraft. And in that, in Santa Barbara we have this need, and again I have the same goal with this group as identified to move that information down to the ground to those three points and in the last few years, we've started a pilot project in Santa Barbara with doing that and basically we bought stuff off the shelf, an infrared camera, a video camera and some mapping programs to map the fires and we put a person in the back and you have a handout on that. That's been a struggle. It has been costly. It has also been a struggle to move the data. Right now we are able to move just a quick picture of a map and we're using a satellite technology to do that and we've had some successes on getting it down to the ground. We have a long ways to go on that process, but we're moving it forward.

CHAIR CAMPBELL: Is the predator technology available to the private sector as far as the infrared?

MR. HOLBERT: The question is the predator technology available? We believe it is, but what we've seen is just extremely costly and the other factors involved is when you start introducing aircraft like that, the FAR's and how that interacts with other airplanes and things and we've yet to come to realize how we can best utilize that, but it definitely has our interest and our excitement. That whole program.

CHAIR CAMPBELL: I apologize. We have a presentation on the predator.

MR. HOLBERT: Good, I look forward to seeing that.

(**UNIDENTIFIED FEMALE SPEAKER**): Just a quick question, it really is quick. These pictures in the brochure are of – you used it during a fire situation?

MR. HOLBERT: Yes, ma'am.

(**UNIDENTIFIED FEMALE SPEAKER**): And you were to transmit the images to the ground?

MR. HOLBERT: I think in that program only the map images were transmitted to the ground, which is a quick burst as far as the actual IR, they land and give it to somebody at this time. Our goal is to do that real soon though.

(**UNIDENTIFIED FEMALE SPEAKER**): I applaud you for trying to get it going.

MR. HOLBERT: So basically in that program we (**unintelligible**) we're trying to move it around and you can see there's also a moving map. We have a huge desire to move it around. The other thing that I'm really excited about is we've started a program and it's evolving as I sit here today called Fire Watch in already I believe the L.A. County is interested in partnering up with this. Ventura County is interested in this program. We have offered it up to other folks and basically it's a platform to do just what we're saying we're talking about and to regress a little bit, the issues that I'm dealing with on pushing this forward in a contract aircraft is the – and that's what most of our business is, as that's owned by somebody else, so whenever I go to put in a wire or any kind of technology, I run into barriers with STC's and what I can and can't do and I'm modifying somebody's airplane.

(**UNIDENTIFIED FEMALE SPEAKER**): A quick question on that. Can the agency use any existing equipment and your technology in installing or do they have to use that platform?

MR. HOLBERT: I would encourage you to go in as many different platforms as we can. We're only utilizing that as a test bit.

(**UNIDENTIFIED FEMALE SPEAKER**): Okay, thank you.

MR. HOLBERT: And so with this Fire Watch program, what we were able to do because it was cost effective and through the A76 study have proven that this is the best bang for the taxpayer, is that we're able to test a bunch of things that we're talking about in a platform and we've – one has just showed up about a month ago and we're presently trying to meet the same goal that this group is in putting this technology in this aircraft. Traditionally, when we first started this program out, we thought it would fill the nitch in the air tact group supervisor role, again that's just our eyes in the sky and also help with our lead plane on program, which we're going through all kinds of economic issues and older airplanes and trying to modernize. But I believe that the technology realm of stuff that we're putting in this aircraft will drive this program and meet the needs of what I believe this group is looking for. And basically, you can see inside that, again, this is the latest and greatest technologies though. We have a moving map display. We hope to have real time video and also real time IR, in other words infrared information to pass to these three locations down the road. The one thing I want to introduce, several years ago I was on a – (**unintelligible**) just like this and we introduced the night flying program and it went along for a while and we learned a lot of things until we had a mid-air and some fatalities and at that time L.A. County pulled out and we, you know, so this whole issue at night is nothing new. We really want to go out and do things at night, but I believe now that the mission of this Fire Watch program is not a tactical mission, it's an information gathering mission, so with the new technologies of night vision goggles and help to introduce night vision to this program and be able to have that 24 hours in the sky. Again, this is a pilot program. We're not moving data yet. It's sitting and ready and number two is being built up right now. Again, there's interest from the counties. I believe we are spending way more money on the technology than the aircraft, but it is an affordable platform that's going on. It also has interest with FEMA. I think as this group looks at it, I really hope that we look at this technology at an interagency basis with Homeland Defense and FEMA and all these other things because to stand along, this is a lot of funds, but if we can help everybody out, the taxpayer wins.

As far as recommendations, there's been a lot of talk about implementing the military into the fight here and I believe me, we've done that several times over the years and from a tactical standpoint, it has not been very effective for a lot of different barriers and reasons, but from an information gathering standpoint, I believe we have yet to tap into a huge resource and we as a forest service agency are struggling with that.

We keep hearing about, well there's something over here in this plane and somebody has something over there, but if this group could help us further taping into the technology the military has for real time information gathering, I believe we will be doing good for our taxpayer.

CHAIR CAMPBELL: Excuse sir, Assemblymen LaSuer has a question.

ASSEMBLYMEN LASUER: Real fast. You're talking about this is a pilot program and I think I noticed that you said it could be for dual use, or dual purpose. So if a county were to obtain something like this, they could use it not only for that but for – especially with (**unintelligible**) use it for law enforcement, rescue and also things as that. So it would be more economical to cooperate that way?

MR. HOLBERT: I hope so. I mean that's my goal. I'm just one guy sitting here saying this is a great idea. We need to do this and my goal is to make it interagency and for the good of everybody.

ASSEMBLYMEN LASUER: How is the county – how's this made available to the county?

MR. HOLBERT: Well right now the only examples I can give you is two. L.A. County is very interested and they put in a proposal to get one of these aircraft and evolve it, and we are meeting with them to share experiences in technology so we go down the same road together. I know there is an interest from Ventura County has called me and very interested in what we are doing. My goal again is to work together and somehow get a consortium to where we're not going down five different roads. There's other people in the audience and they're also working on the same problem and we need to keep coming together in the same room and learning from each other because there's still a lot to lean on that and make it cost effective. Again, because my barrier is with technology, moving it around and the cost. And lastly, you know, I think we all – you know 24/7 eyes in the sky is what we need and for the good of everybody. Thank you very much.

CHAIR CAMPBELL: Thank you very much. There's a question, go ahead supervisor.

(**UNIDENTIFIED MALE SPEAKER**): Very quickly let me – you mention you have checked out 300 pilots out of the private sector.

MR. HOLBERT: Yes sir.

(**UNIDENTIFIED MALE SPEAKER**): To fly helicopters. Over what period of time?

MR. HOLBERT: We keep those on record. Right now if we went to the database, we'd have 300 pilots.

(**UNIDENTIFIED MALE SPEAKER**): Okay, so that's over a long period of time. You haven't stepped up anything since the fire season yet?

MR. HOLBERT: No sir. It's been an ongoing process. The thing we have stepped up is the interest from the **Cardi Moore** military assets

{End of Tape 1)

(**UNIDENTIFIED MALE SPEAKER**): …and how many do you have on-call?

MR. HOLBERT: That's an agreement that what's called call-when-needed, so it's a gentleman's agreement and I can't guarantee you they're going to be available sitting around waiting for us.

(**UNIDENTIFIED MALE SPEAKER**): I understand that, but how many do you card?

MR. HOLBERT: We have about, I would say roughly eighty.

(**UNIDENTIFIED MALE SPEAKER**): Eighty?

MR. HOLBERT: That's a guess. I don't know for sure. I think it's around – I know it's over

(**UNIDENTIFIED MALE SPEAKER**): In California only?

MR. HOLBERT: Yes sir.

(**UNIDENTIFIED MALE SPEAKER**): Now the 300, is that a current list of pilots? These 300 carded pilots, and are they carded – I'm assuming they're carded annually?

MR. HOLBERT: Yeah. I need to correct that. That 300 also includes all our cooperators.

(**UNIDENTIFIED MALE SPEAKER**): I see. Okay. Thank you.

CHAIR CAMPBELL: Jerry.

DIRECTOR HAMILTON: Thank you Mr. Chairman. I wanted to clarify something in the presentation. The Forest Service relationship with the military has enjoyed a long and productive, I believe, relationship. The Cobra helicopter you saw in this picture was from the military through agreement with the military. Many of the radio systems, the infrared systems, the GPS systems that we enjoy is part of our operational technology directly benefited from the relationship with the military and in fact, at the national level, the program manager for aviation and the Forest Service is a 20-year career Air Force Pilot with a Ph.D. We're fortunate to enjoy the relationship that we have with the military. Thank you Mr. Chairman.

CHAIR CAMPBELL: Anymore questions? Thank you very much. I appreciate your testimony here today. Next, this will be our last witness before lunch. Glen Craig. I first met Glen Craig when I was

elected to the Assembly in 1966 and he was a very young lieutenant in the Highway Patrol and he rose to be Commissioner of the Highway Patrol and retired and became Director of Law Enforcement for the Attorney General and then Sheriff of Sacramento County for a number of years and Sheriff, Director, Commissioner, we're happy to have you here today Glen.

MR. CRAIG: Thank you Senator. Mr. Chairman. Members of the Committee. I'm delighted to be here, but you're giving away our age Senator.

CHAIR CAMPBELL: No, just yours.

[Laughter]

MR. CRAIG: You were a younger assemblyman than I was a Lieutenant I think. First let me clarify and you've stated with my background. I'm not a fire person and I wasn't present during the fires and I don't intend to comment upon those. I'm here today to talk about the issue of interoperable communication between multiple disciplines and multiple jurisdictions and after the presentation by Don Root, mine has shortened considerably, because he has covered literally most of what there is to cover. But before I go on, you know, even though I'm not from the fire service, let me just say that from the magnitude of the fires that were encountered in Southern California, multiple agencies involved, the communication problems, all of the resource problems that did occur, the people who were there did an extraordinary and outstanding job under very trying circumstances. When we have these hearings, we tend to focus on the problems and the negatives and sometimes we forget what a tremendous job that was done under those circumstances. But like Mr. LaSuer here, almost every after action report that I've read in over 44 years of law enforcement has as one of the top three elements and top three concerns is communication. The inability for people to communicate effectively has been a hindrance for years and I've been a part of a number of committees that have published reports and talked about interoperable needs and it gathers dust, much like what you talked about in the early '70's. Certainly we're hoping that won't happen here. And I think that you heard about the AB 2818 committee that was established by Mr. **NICANO's** bill. That I'm very hopeful will break some ground and make some recommendations that may get us over this hump, but there are some very valid reasons and why we've gotten ourselves in this position where we're unable to talk to each other. I think in the beginning, the systems built up to accommodate the needs of individual agencies and departments and quite frankly, there were no overriding standards and no responsibility to see

the people met standards that would allow them to have interoperable communication. I happen to be the commissioner of the Highway Patrol when we made the decision not to move to the 800 mhz. like most local agencies were doing. We made that decision for, I think some very valid reasons then and some of those reasons are still valid today for both the California Division of Forestry and the Highway Patrol. Some of the obstacles that you have to overcome with interoperability is the different bands and different frequencies in use, but there's different terrain and different problems. The Highway Patrol, Forestry serve a lot of areas that are very mountainous. The Highway Patrol for example has something between 130 and 150 mountaintop repeaters to accommodate them statewide. If they convert to 800 mhz., they'll have to more than triple that number. That's an astronomical cost, not to mention the environmental problems they run through going through the environmental reports that has to be for a single tower. They've been working for two years right now to get one additional tower through the environmental process to build that tower. Now if you have to build another 200, you can imagine how long it's going to take. But the other thing that is even more significant is that the low bands bend and they can work in the mountainous areas where with the high bands it's line of sight. That's the reason they need so many repeaters. I think it's pretty clear that no matter what kind of system we decide in the State of California is going to be necessary for interoperability, the state is going to have to maintain that backbone of the low band frequencies, and one of the reasons for that is CDF and the Highway Patrol, no matter what the emergency is, whether it's a civil disorder, a fire, a major demonstration like the AG Conference in Sacramento, resources are drawn from all over the state. They are drawn and they have to be able to communicate with each other regardless of what the local agency is doing and whether or not the CHP can communicate with those local people. So I think there's some reasons to look at saying, we need some alternatives to the state building one big system that everybody would join. I don't think that's very practical and I will tell you that I have really shortened most of it down to talking about some of the obstacles that exist to doing this and also the recommendations we have.

First of all, technology is not an obstacle. The technology is there to accomplish interoperable communication. I think the major problems that we face are funding limitations, number one. There is no money either at the state or local level to do this at the present time. We have the different frequency bands, the extreme change between the high and low bands that we have to overcome, but technology can address

that. The political turf issues are a major obstacle. Sometimes the major obstacles, the political turf, is far a greater obstacle than the technology to overcome. The human and institutional limitations, because there are a lot of people very comfortable with what they have. They don't want to change. They don't want to learn a new system. They don't want to adjust. Hey, this works for me. Leave me alone in my own little world and I'll be fine, but don't make me change. Those are things we have to address. One of the others, of course, is the fact that there is no single agency or no single place responsible for setting the standards. There are national standards and I'll talk about that in a minute in my recommendation, but there's nothing that's happening at the state level that really establishes that accountability and responsibility until AB 2018 passed and this committee was established and we'll see what the recommendations are and where they go and how much impact it has with the legislature.

Insofar as our recommendations from our California Alliance for Public Safety Communication, as I indicated, we believe it is very impractical, too costly and too slow for the state to consider building a system that will solve all of the interoperability problems for the state. I think the cost factor for building up and making the change over from low band to high band for the State of California has been estimated at about three billion dollars. That to me is something that, you know, might be (**unintelligible**) to look for, but it's not going to happen in our lifetime. So we need to look at other alternatives. I think the state agencies need to take advantage of the work that has been done locally to create regional systems and join with the locals on a regional basis to enhance those systems. For example, San Diego County, Sacramento County and Orange County have developed and put substantial amounts of money into building interoperable systems for their respective counties. In San Diego, both the Highway Patrol and Cal Trans have joined that system. While one of the things we recognize with these fires is the system was not totally adequate to handle the tremendous amount of traffic that was thrust upon it. They found that there were some coverage areas where they had difficulty. They knew that there were capacity problems in the northeast part and the southern part of the county. Curt Munro is here from San Diego and he can give you a far better picture of that than I will, but it's going to take about thirty million dollars to bring that system up to standard, but that's cheaper than trying to create a new system, and for the State of California to join that, you know, really makes a great deal of sense. In Sacramento County, Cal Trans has joined. The CHP is looking to join their system. In Orange County it is. We need to take advantage of what has already

happened locally and join forces with them utilizing their systems, rather than recreate a new system. I think that obviously you've talked about the black box, you talked about switching systems and those are excellent for the immediate, short-term, major incident management issues, but they have severe limitations. One of them is capacity and the number of units they can handle, the number of people that can be on at one time. You heard Dallas Jones mention that and I think that whatever you do in that regard you have to recognize that is an interim solution. It is not the long-term solution we're looking for. The other thing I want to implore you, is not to get hung up on just the major disasters, the emergencies. After every situation we have like this, we examine it and we begin to fashion solutions that deal with those emergencies, but day in and day out, law enforcement and fire services are interacting with each other on emergency situations where interoperable communication really is critical and where it doesn't exist very many places in the state. We need to focus on ensuring that happens. I think that federal funding is coming down. A lot of money is going to be coming down from the Homeland Security Act and we're going to see a considerable amount come into the State of California. I think we need to examine that and say insofar as communication needs are concerned, the State of California needs to establish the priority for allocating those funds for communication to those areas and those places where they're putting together regional systems to accomplish the interoperable communications. Going to individual departments is fine to enhance their system, but it doesn't help if they can't communicate with other agencies. So we need to ensure that that is established. I think that we also have to get California to recognize that as part and parcel to receiving those federal funds, we're going to have to recognize that the P25 standard that has been adopted by the feds is going to be a prerequisite for getting federal funds and there is a lot of resistance among some parts of the public safety community in California to accept that P25 standard, but it is going to be a criteria for federal funds. It is, in fact, a criteria for federal funds and we need to look at that.

And finally, I think that the last and most difficult is we cannot depend entirely upon federal funds to make interoperability happen and the State of California is going to have to develop an independent funding mechanism to expedite and accomplish interoperable communication. And with that Mr. Chairman, I will conclude my presentation.

CHAIR CAMPBELL: Thank you. Any questions? Yes sir.

(**UNIDENTIFIED MALE SPEAKER**): I have one question. It seems that whenever we talk about interoperability, one of the basic assumptions is that we need to migrate to high band, and that somehow this migration is going to fix all of our problems and I get a little disturbed when we talked – we migrated to 800 and ended up in one county with two systems that wouldn't talk to one another and we spent 10 years probably trying to get them to work together and they still don't. The vendors are now migrating us from analog to digital, so we're going to fix that problem in the 800, but now I hear us trying to go to 700 and I'd like you to comment about low band, because I keep going back to that. We carry two complete radio systems in all of our apparatus. We rely on the VHF when stuff happens and so I just wonder if you could comment about the practicality of enhancing the VHF system.

MR. CRAIG: Well I think obviously VHF has it's place with the agencies I mentioned. And particularly when you're working in the mountainous areas and terrain where you would have to spend billions of dollars to migrate to the 800 mhz with high band. I'm not so sure that there is any one system that is going to satisfy the needs to the State of California. In fact, I'm pretty sure there isn't a single system that is going to satisfy our needs. But I at the same time do not believe it makes sense with all of the local agencies that we have on 800 mhz. for them to consider also going back to the VHF. I don't think that's a practical thing to consider. I think we have to face the fact that we're probably going to have two systems in existence and work for ways to integrate those systems to be most effective.

CHAIR CAMPBELL: Thank you Chief (**unintelligible**).

ASSEMBLYMAN LASUER: Just a quick comment on some things that you said there. The Highway Patrol is a pretty unique organization. They work in all types of geographical areas. They work in every political area there possibly is and they have to communicate with every other agency in the state and they have to work with them, so that radar is still un-American, but that's all right.

CHAIR CAMPBELL: Is this a great country or what.

ASSEMBLYMAN LASUER: We're in a situation where the CHP has had a very long learning curve on the art of communications and it's kind of a breath of fresh air to hear some comments and as I agree with you, there's not a system we can build that cannot be overwhelmed and we probably will use two systems, but there are some good systems that have been – the basic foundation is out there and rather than go and re-invent the wheel, there's just a little bit more in those areas, particularly in the Counties that

you mention. We will have some good systems, but they are a long way from it right now. But it would certainly be possible, a lot less expensive than it would be to go to an entirely new situation and we have a major catastrophe again and find out that that system also is overwhelmed. Even in the old days when you'd been on about 10 years and I was a brand new police officer, even then, with the few of us that there were, you could overwhelm those systems, as the population has grown and the units and the amount of chatter on the airways is very simple to do that again, but I think basically I think from everything I've heard, you seem to be on the right track that let's improve on what we have rather than going out and trying to sink a tremendous amount of money into something else. And I appreciate your comments.

CHAIR CAMPBELL: Thank you Senator. You know, I look into the future. I'm sorry.

MR. CAINE: I have one question.

CHAIR CAMPBELL: Just one, David (**unintelligible**).

MR. CAINE: During a bridge fire, I was privileged to be at the incident command post and observed the actions of the leaders. The first thing I noticed was they set up a frequency, it was a VLF frequency obviously it ran 155.250, something like that. Everyone was told that will be our channel before communications. Clearly that is dealing with the older equipment, dealing with mountainous terrain, many of the issues you brought up. Isn't it logical that in the absence of funding a three billion overhaul of this system that by good incident command leadership that channel frequency could be mandated for every incident in a manner that could accommodate communications? Or is that simply unrealistic? I don't know the limits of the system, that's why I'm asking the question.

MR. CRAIG: Well I'm not really sure that's a practical thing to consider when you think of the – it may work if you talked about that for fire alone. When you start bringing in the myriad law enforcement agencies that we may encounter in any given incident, I'm not really sure that's a practical thing to do. I think really what I'm suggesting is we need to analyze, number one, how we deal with it on a statewide basis for those kind of incidents when you got people coming from all over. But we also need to take a look at it on a regional basis and make a determination regionally how we can best enhance that system to make it happen and it may be that it's putting the money into and enhancing local systems that the state can then join in on and that's what I'm suggesting. There's a lot of money already been spent and we don't want to see that money go to waste. We want to see it not only capitalize on either foundation for where we go.

CHAIR CAMPBELL: Thank you very much. Mention to the Highway Patrol, I'd like to express my appreciation to Commissioner **Spike Helmick for** his assistance with these hearings and to the two officers that are with us today. Thank you very much. And because we are way past my lunch hour, and as you can see, I have never missed a lunch, I think it's appropriate we recess, the hour being about 12:45 and we'll reconvene at 13:25. Thank you.

CHAIR CAMPBELL: I know we're – time wise it's a little tough for those who got a late order in the restaurant, but I think we'll begin anyway. I have one announcement for -- the Blue Ribbon Commission has a website and the website address is www.oes.ca.gov. And if you go on there and you look for the Blue Ribbon Fire Commission – is that right Bob? Click onto that. It's in blue, oh! So the reason I'm getting all this advice is I'm illiterate when it comes to computers and so this clicking on and off I don't understand. I talk like I do, but trust me I don't. The other announcement I wanted to make was to the members of the commission. Our next meeting will be February 19th, Thursday at 10:00 in the Costa Mesa Hilton. That's Thursday the 19th of February. And then our final hearing of the commission will be March 18th in Los Angeles, somewhere near LAX, near the airport. We're still trying to come up with a hotel in that area. So that's February 19th, Thursday in Orange County at the Costa Mesa Hilton, which I believe is near the airport, the John Wayne Airport. And then March 18th in LAX in Los Angeles, a hotel near LAX. We're working on those.

All right, our next presenters are Darryl **Jobes**, the Fire Chief and Curt Munro, the Manager of the San Diego Imperial County Regional Communication System. Gentleman, thank you for being here today.

CHIEF JOBES: Mr. Chairman, thank you. Thank you for the opportunity to –

CHAIR CAMPBELL: We'd like for you to pull those mikes as close to you as you can without –

CHIEF JOBES: Okay. Coming down here today, I was taking a look at the Union Tribune from San Diego and there was a section here I think it's appropriate as we talk today and this is related to Chief Hawkins, the Incident Commander for the Cedar incident. And I quote here, "At one point with an 18 mile line of fire heading right for Julian, communications went dead Hawkins said. Flames had engulfed mountaintop transmitters. Robert E. Lee had better communications at Gettysburg than we did." That's a situation that's very deplorable for public safety members. As we're trying –

CHAIR CAMPBELL: Robert E. Lee didn't like it either

[Laughter]

CHIEF JOBES: San Diego County took a lead in looking at interoperability in communications starting in the late 1980's. We've now developed a memorandum of agreement with 207 agencies, 16,000 users in the county region, San Diego and Imperial. We've taken and built a communications system that handles the day-to-day initial dispatch of incidents, so that we can provide interoperability with the users. During the Cedar Fire, we had also Paradise and **Otay** fires. We've been able to ascertain there were approximately eight different communication systems that were operating during those incidents. We feel that with the development of interoperability and standards being set, that those systems could be reduced down to two. And I'd like to take and ask Curt Munro, our Systems Manager, to describe to you some of the methods that we've identified that will facilitate that move.

CHAIR CAMPBELL: I think one of the things I should say, that San Diego has spent a lot of money on this system and it's up and operating and, but like all other systems it too that overwhelmed (**unintelligible**), but I appreciate the fact that the Board of Supervisors down there and the local governments have moved forward on this and it's one of the, I think as Glen Craig said, there were three or four counties that have moved in this area, and you're one of them, and you've set the example and we appreciate that.

CHIEF JOBES: We don't have a perfect system. It has to be built. It's constrained by finances. Having been in San Diego during the Laguna fire and now today's – last year's fire, we've made tremendous improvements. It's not perfect and I don't think that we could build a system that would handle three major fires simultaneously in one county that would be cost effective for the everyday use.

CHAIR CAMPBELL: I think it's important for all of us to keep in mind, this was one of the worst disasters in the history of the State of California. And it's, you know, I compare it to the earthquake in – I wasn't around, but I think 1906, in San Francisco. As far as it relates to area covered and the damage, is just 760,000 acres, you know, is Connecticut and Rhode Island, I think, and it's just a huge amount of acreage, and the number of homes. Over 3,600 homes. That's hard to envision. I mean you're talking about 3,600 families that are devastated. Some of them less so than others, but all were – all lost something in there, something very personal and very important to them. And then the lives that were lost and then the subsequent lives were lost in the flood up in the San Bernardino mountains afterwards. It's just an

unbelievable tragedy. What this commission is trying to do is find out how we can prevent that from happening in the future and we're going to put somebody in charge of the Santa Ana winds, we just now sure who.

[Laughter]

MR. MUNRO: Thank you Chairman. You folks all have a copy of this handout I believe don't you? (**unintelligible**) a little interacting on this one

CHAIR CAMPBELL: Would you move that mike please, I have a hearing problem.

MR. MUNRO: Thank you. First slide is up. I'm not going to redefine interoperability, it's the same definition that Don Root used. I think though that it's important to put a few things into perspective in regards to this fire. Just in San Diego County, we had 7,779 firefighters were deployed working that fire. In addition to that, we had hundreds of law enforcement personnel that were also assigned to the fire events for (**unintelligible**), evacuation, that kind of thing. In addition to that, we also had people who were doing their normal daily functions in fire and law and EMS responding to calls that were not in fire area. So when you look at a system – excuse me, the requirements to provide adequate communications for a system that large, it gets to be to the point where it's really very challenging. So the other thing I wanted you to look at was the second definition – paragraph there on the importance of interoperability, because that's really is I think what we need to concentrate on. Why we need to put our finances here. No one should suffer harm or lose their property simply because public safety personnel from different agencies or jurisdictions cannot communicate with each other. That's just the bottom of why this is important.

There are a number – six levels of interoperability that you can achieve and I'll discuss those briefly. Excuse me – starting from the bottom up, stropping radios, which is pretty self-explanatory and it's not very satisfying in terms of it's capability for effective operations. (**Unintelligible**) **tachermand** is a conventional operation where you have a frequency and two radios and it's basically like two cans and a string type of (**unintelligible**), so as long as you have line of sight between those two radios, you can wind up talking to each other. It's a regular one frequency, two user kind of communication device, and the limitations are if you have an 18 mile fire front and you're not in the line of sight with the other end of the line, so it's much more difficult to deploy in that kind of a situation. And for users with more sophisticated systems, as we'll talk about in a few minutes, level 5 and level 6, anybody that – and those systems that are

using line of sight operation, they're actually off their own system. They're no longer able to communicate with their dispatcher or the people they were normally communicating with. Level 3 is mutual aid channels, and there's nothing wrong with mutual aid channels in terms of their deployment. They're important. I don't think that we're going to wind up being able to do away with them. There are limitations though in terms of mutual aid channels in terms of how many – how much capacity can a mutual aid channel handle. In an incident like this where you've got a lot of need for coordination of personnel and other tasks in addition to communications on the fire line, that kind of thing, then mutual aid channels really do not have the capacity for large incidents to be able to handle on their own, not for satisfactory communications. Level 4 is the black box that we were talking about, that Don was talking about and I've heard the Commissioner talking about earlier. And really the black box is no more than what's been in use in radio systems between radio systems for years, it's called a patch. That's basically all it is. It's a – you set one radio – portable radio in this little black box and the other one in the little black box and they talk across each other. So it's nothing sophisticated whatsoever. One of the big drawbacks there, is that if you had five channels on your system, and now you've got one channel that's clinked up – excuse me, cross band patch they call it on this black box, now you have four channels available to operate on. The other one is tied up and can't be used for anything other than that patch. So that's an obvious limitation, when you start talking about the smaller the agency is, the more difficult that is to resolve. Okay, system specific roaming, level 5. What that means is that – and I'll use the main vendors name here because that's where we purchased our systems from and that's whose systems are most deployed in Southern California, Motorola. We purchased a Motorola system specific system, which means that it's all vendor protocol. The radios are manufactured by Motorola or by the people that they license to – they allow licenses to manufacture their equipment, which are very few. And whether it's Motorola or another vendor, you're really in a position where you have – a few years ago, a Mac computer and an IBM where the two would not communicate with each other. The very base level of communications was capable. It also puts us in a very difficult position in terms of bargaining. The vendor obviously has an advantage in terms of how they set their prices and if that's the only person you can wind up buying from, well you're not in a very attainable situation. However, system specific roaming, the systems that are currently deployed like the RCS have a lot of other advantages that I can go into here in a couple seconds. The standards base system is what you heard be

called a P25. A Project 25, and that's short for Association of Public Safety Communications Officials Project 25. Now APCO is basically the group that the FCC has authorized to develop these standards. It took them over a decade to develop the project 25 standards. (**Unintelligible**) Project 25 standards are now is a platform for the future for us to wind up being able to move to. In the instance of agencies with level 1 through 4, that's going to be a hard transition. They're going to have to – in all cases – in all likelihood, replace all of their equipment and buy all new equipment. So the only thing that they'll actually be able to reuse from one system to the other would be the towers and buildings and such like that associated with communications repeaters. That's what the County of San Diego had to do when they left their level 4 and went to a level 5. The other thing though about level 6, is that level 6 is backwards compatible to a level 5 system. So I can – if the City of San Diego, let's say, moves to a Project 25 compliant network, then I can wind up having the ability to communicate to them – or excuse me – they can have the ability to communicate back to us. I can't wind up taking my radio and put it on their system because it's – the two systems' speeds are different. So we can't do it that way. But it allows for a graceful migration from one platform to another, and that's really the beginning stages of Project 25 – Project 25 platform. Something else that has been I think confused about P25 systems is the belief that some people have that this is only 800 mhz. It's not. P25 standards are frequency independent. It really doesn't make any difference from VHF, UHF or 800 MHz. There are systems being deployed in this state right now that are P25 compliant that are in the VHF back (**unintelligible**). So, the only real thing to remember is that if you have a level 6 system, as long as your footprint – in other words the geography that your sites cover is similar or the same as the 800 MHz system footprint that you want to wind up communicating to, then you can do it. That's the advantage of a Project 25. Right now, with a level 3 – level 2 system or level 4 system, excuse me, level 4 system, you can't do that. The only way you could do that would be to pass those two systems together. So, and the other thing that I think hasn't been discussed – couple things. One, Don Root wanted me to remind or to clarify is the fact that the 700 mhz. frequencies, if you look at it within the spectrum, it's not – it's a new area of spectrum that we're able to use, but it's contiguous to the 806 frequencies that we use right now. So it's basically goes from now 700 through 825 in a string. That's basically what's going to happen. So, we don't have to replace the systems. The nature of performance within that 700 range frequencies that we're using and the 800 that were used now is similar. So, we can use the same equipment and it's not a

big deal. But for the future, the only way that we can get out of this morass, this (**unintelligible**) tower of different spectrum and different radio systems is to be able to transition, to migrate to a standard space system to level 6. If you want, you can leave that – your handout on this page that talks about these systems and then we'll go to the next slide, because it may help you as you look at the slides as to how it relates.

This slide talks really about the magnitude of the event and it's just to give you a little perspective if you don't have any background in law or fire or public safety as to how events are actually handled. If it's an event that's within the capability of the agency that's handling it, then it's handled within that first column there. That single agency handles the incident – we would normally consider a daily incident, routine operation. As the event magnifies, and it may be that – let's say it's a car crash that involves injuries, then law enforcement was handling the event, now they have to call fire and EMS to wind up handling the incident as it escalates. So, that would be the second column, an event that is handled by multiple agencies, same jurisdiction. The large event handled by regional agencies would be more like a parade event, or maybe a wild land fire that was within the jurisdiction of the two or maybe an event that involved multiple departments in two different jurisdictions that were overlapping a border, something of that nature. And a large event handled by multiple regions, jurisdictions and disciplines, would be what we experienced in October.

Using the same pictures, but talking now about types of radio systems. An example of that single discipline radio system is CDF. By the way, we have a lot of different fire stations and repeater sites throughout the state. There is still one radio system. We serve the purpose of one agency basically CDF.

The next example, we have a single jurisdiction, multiple disciplines and the same system. So, you can look at that and see it's a single city that is providing one radio system that supports the needs of fire, EMS, public works, things like that.

A system that supports one region with multiple jurisdictions, multiple disciplines and the same system is the example for that is the San Diego, Imperial County regional communication system. In that case, we have been able to with a wide deployment of a network and a memorandums of understanding between different agencies, we could support the means of over 200 agencies right now for their normal day-to-day operation.

The last one is multiple jurisdictions and multiple disciplines. Really what this is, is just a network of networks. And it's something that Glen Craig kind of hit on in his little talk. It's taking best advantage of the existing deployed networks, building the links between the two where they don't exist and thereby expanding and finding a way of being able to transition to this Project 25 platform where we can move forward then as a (**unintelligible**). That's basically what I wanted to present.

One other thing, if we can go to the next slide, which is the current levels of interoperability in Southern California. As you can see, no one here is at level 6. We have three counties that are at level 5, support interoperability between levels 1 and 5. In the case of some of us, we still, even though we're at a level 5 system, we still need to wind up making improvements. Our network in the east county portion of San Diego County did not support the large call volumes that we received. That was a decision made early on that we're going to have to wind up changing because it doesn't operate in the same manner as the rest of the system, so we didn't have the capacity out there to be able to handle the calls. What was interpreted by some of the users as a lack of coverage, was not a lack of coverage. We simply did not have enough frequencies on the air, talk groups if you will, talk channels, to be able to handle the multiple conversations that we needed to be able to handle.

One other thing, this is – as you could tell from listening to Don, it's a very complicated field when we talk about how to wind up determining the size of a system and you've got all kinds of things that you've got to look at, not the least of which is the FCC requirements, because the FCC won't let you build a system that would wind up supporting the potential of a fire storm 2003 in San Diego County, because you have to wind up being able to show that you could load each of those channels that you're licensed for, with at least 75 radios. So, it would not have been able – you just really can't get there. The best that we can do is to move forward with the multiple systems that we have to be able to get at some point in time to a Project 25 platform where differences in spectrum don't make a lot of difference at all. It's just a matter of then the footprint. As long as the footprint is identical and you could wind up talking to each other, and it's an excellent resource at that point. That's it.

CHIEF JOBES: I think as we try to wrap this up real quickly here, because a lot of this has already been covered as we'd said. Standards. Standards have to be set, because right now P25 is a standard, but it's not a must comply with. So we need the state. The Federal Government is not taking the lead in this, so

we need the state to set the standard so that this is where we're going to be moving to, whether you're in an 800 spectrum or VHF; it has to be P25.

The second, is we've got to have interoperability from the initial dispatch. You can't wait until an incident has grown to the magnitude and the delay of getting caches and so on. Those are going to be for large scale and long duration incidents. We've got to have the people talking out the door so we can get the right resources to the right place in the most appropriate amount of time. You've heard today that if you look back at the interoperability chart, Southern California has continued to take the lead. We need to continue to build this out. Safecom identified that funding was a critical component. We've talked about replacing radios. The spectrum narrow banding and splitting for digital. Did you know that's going to take planning? It's going to take coordination. It's going to take implementation. It's going to take maintenance. And it's also going to require migration to the next phases. That is a continual process. We don't want to be throwing systems away, so as we plan and develop these systems, we looking and leaving the room to migrate so we can utilize as much of the existing system while we're taking and implementing new technology, but that takes continual and ongoing funding, be it at the local level, be it at the state or federal. There has to be a commitment to say we're going to take a step forward and we're going to address communication needs, and it's going to be ongoing because it's not a one-time, one-shot, here we can fix it, and we can turn our backs and walk away. It's continual. Thank you, I'll be happy to answer any questions.

CHAIR CAMPBELL: Thank you. We have a first question from Assemblywoman Kehoe.

ASSEMBLYWOMAN KEHOE: Thank you Mr. Chairman. I just want to know, you started off with that quote saying the communications level was the same as the battle of Gettysburg and then at other times we've heard, not just in this meeting, but in other meetings of the commission that the communications available to the firefighters on the line were very good and most of it worked fine. What's your assessment of what really happened in San Diego, say in the case of the Cedar fire, where we've heard firefighters say they could not communicate with other firefighters there (**unintelligible**).

CHIEF JOBES: I think that we'd have to, one, go back and identify what system were they working on. Were they working on a fire cache where you've brought in radios and are trying to put mobile repeaters up on mountaintops or working on the 800 system where there was lack of capacity. Were they working on the existing U.S. Forest Service System with mountaintops, the CDF, California Department of

Forest Fire Protection System that's on mountaintops within the county. Those all have different coverage areas and they have their different weaknesses and I think in all honesty, we're going to have to have two radio systems. The Forest Service has a mission on the Cleveland. CDF has a mission in the SRA the wild land areas. They're going to build their system, they're reliant upon local resources for those initial responses that take place. We've got agencies that overlap. We need to coordinate the response. We need to coordinate the systems. I was looking back at reports, CDF has radios on the regional communication system backbone. Their radio traffic increased to 300% during these fires, so there's definitely a lack of resource capacity, I think across the board, so we need to have better dialogue, we need to be talking about this. We've been working in the county for years, how are we going to address this? Do we go to a VHS system when we go to wild land fire? Well initially out the door there is only a certain number of frequencies, channels that you can use with the regional communication system, we've now enhanced that and added a lot more channels, but we also have seen a significant change in wild fire behavior in the last few years. We started designing the system in the early '90's. The Board of Supervisors bought off on it in the mid-'90's and was implemented. But since then, we've seen – we have major wild land incidents year-round. We started with Harmony Grove, we went to **Gavlin**, we went to **Viahos**, we've had Pines, now we've had Cedar, Paradise. These are all fires that this system in the eastern portion (**unintelligible**) loop system, it does not have the capacity. Curt I think you had one additional –

MR. MUNRO: Also in answer to clarify your question, because it's a very good question. How do you know who to believe here. The only systems that were in deployment during the fire is the San Diego County that had the capacity to collect statistics, like I'm talking about is basically the City of San Diego has a system that will – (**unintelligible**) and in the period of time during the fire, we had 265,000 busies in the east county area where – that's 24 times normal what we had, so those were hard line statistics. That was from someone – hit the button on the radio, we call it the push to talk button to be able to speak into the mike and got a busy signal. The existing systems can't (**unintelligible**)

ASSEMBLYWOMAN KEHOE: How many busy signals did you get?

MR. MUNRO: 265,000.

CHAIR CAMPBELL: Who counted?

[Laughter]

MR. MUNRO: I have little gremlins that do that. Yeah, my staff's really good. No, it's a computer capability in management.

ASSEMBLYWOMAN KEHOE: And that's what the newspaper reported from firefighters that were fighting, that they could not get through on their equipment and so they were kind of, you know, flying blind so to speak.

MR. MUNRO: If they were talking – see it really gets complicated because when it comes out as something that was reported in the news media, then it's hard to tell what system was that person talking on. If it was ours, then it wasn't because they didn't have coverage, because we had better than 97% coverage tested in our county. It was not, in all likelihood, coverage. We didn't see that. If they got a busy signal, it automatically wasn't covered. And we know that that was the case.

ASSEMBLYWOMAN KEHOE: So it was capacity, not coverage.

MR. MUNRO: Lack of capacity.

ASSEMBLYWOMAN KEHOE: Alright. I mean, this is – I'll let – I'll pass for now, but it's an issue that I think we need to do more work on.

CHAIR CAMPBELL: Alright. We have on the list Assemblyman LaSore and Senator Hollingsworth and then Senator Albert, the San Diego Contingent.

ASSEMBLYMAN LASUER: A couple of questions for you. You said that the county system came up at about mid-90's, is that correct?

MR. MUNRO: It's like May of '98.

ASSEMBLYMAN LASUER: In 1990?

MR. MUNRO: May of 1998 we were operation with –

ASSEMBLYMAN LASUER: 1998. What did it cost just the county itself, not the cities.

MR. MUNRO: Forty-three million. Well that was the total, total system cost, but that was network infrastructure Assemblyman, it was not inclusive of the user radios, so you can add a number of millions to that.

ASSEMBLYMAN LASUER: So each city that joined into that, then went into debt to joint it, right? They had to pay x-million dollars?

MR. MUNRO: Well it would probably be handled differently now, but because it was such a risk at the time, the way we had to do it was the County of San Diego is on the hook for the entire debtedness and then the county has now individual contracts with each of the cities for their share of that debtedness.

ASSEMBLYMAN LASUER: I know, because I was on the City Council when we went into debt, go on that at the time. So, it was a tremendous amount of debt by the cities and by the county. What would your other system cost?

MR. MUNRO: Well this is – see this is the point. I'm glad you asked it because it was the point that Chief Jobes was trying to get to. These are ongoing costs. They're not going to end. In our case, in order to wind up – well, we went from 5,600 users when we started in May of '98 to 16,000 users today. We didn't think that we would have 12,000 users until 2011. So, it's grown much quicker than we anticipated. It's exceeded our expectations, so now we're at a point where we have to enhance the network, add capacity, to be able to continue to accept the users that are desirous of coming on. So we've got an enhancement need then for about 20 million dollars, 19-20 million dollars currently. That'll extend the line until we can wind up finding funding to go to the P25 system and then that P25 system is going to cost in the range of 100 million dollars.

ASSEMBLYMAN LASUER: There was a statement made earlier by another presenter, that for the majority of the time, the radios are idle on your day-to-day, you know your channels for the most time are comparatively speaking, idle. With your capacity today that you have on a normal day, so-called routine day if there is such a thing; how busy is your radio? What percentage capacity is it using?

MR. MUNRO: Well it depends in the north cell we have more capacity than anyplace else because of the enhancements that have been made there and we get probably, I don't have the exact figures, but –

ASSEMBLYMAN LASUER: Ballpark.

MR. MUNRO: Five percent of the business that we get per day, less than that even, than the busiest that we experience per day in the east county. In the south cell, we get probably – we're up to about 20% of the busies that we would get in the east county and we know that we have to increase the capacity in both of those areas; east county and south cell.

ASSSEMBLYMAN LASUER: Okay, the last thing, and I ask this because it's a question that would have to be asked. When this system was being planned and everything was being studied, there was

a great deal of time and effort put into it, this is to reach way into the future, and to handle the needs of San Diego County and everybody joined in with it, Cal Trans, you know, dog catcher, everybody joined in on this. Okay, so we did all of that planning back then and we spent 100 million dollars in those days and we don't have the capacity, we build another one that you're speaking of, is it going to have the capacity to handle what occurred in San Diego?

CHIEF JOBES: I think that when we designed this and we looked at it, as we went through the process, P25 was a dream and we knew that the technology level that we were moving to was going to be continually evolving and as we bring these users on, the system was going to have to be enhanced and expanded. We hope that maybe at some point discussions with other 800 users in the region will allow us to share infrastructures, so that we can be more cost effective and handle the type of call volume. I'm not going to sit here and tell you that we can design a system today that's going to handle the call volume in 10 or 20 years. We can project what we think that call volume is going to be. This system has expanded so rapidly with the number of users, as you've mentioned Cal Trans, CHP have come on board, those were projected down the line. We had envisioned putting those enhancements in over a longer period of time. We'd have to shorten that timeframe down, so we're looking at enhancements now to meet the call volume, as I'd mentioned earlier, it's going to take continual funding and migration of the system to handle additional users and capacity. I think that answered your question sir, I'm not positive.

MR. MUNRO: Now, one other point I wanted to make. It was 43 million. That was the cost of the network originally. We've got right now with the additional cities that have come in, as they come in, then we require them to make enhancements to the network for the resources that they're using up to replace or make it better and thereby extend the life of the system. And it's a businesslike way of handling it. We're not making a profit. No one's making anything back on it, but we're trying to make sure that everybody has the capability of using the system for it's planned intended life. That was 43 million dollars to do that. Now to replace that, even though we're going to be able to migrate, somewhere around 30% or 40%, the equipment technology forward to this P25 platform is still going to cost us about 100 million dollars to get it done. But, you know, the alternative, is what we saw in October, but much worse. All that happened in October in San Diego County was that it was much better communications than we would have had had it been alternative bolt systems. We would not have been able to handle that at all.

ASSEMBLYMAN LASUER: So you basically enhanced what you had, which would take you to the P25, less than it would have cost you to start it from nothing to a P25.

MR. MUNRO: That's correct.

ASSEMBLYMAN LASUER: Okay, thank you very much.

CHAIR CAMPBELL: Senator Soto has to leave and she's asked Senator Hollingsworth and Senator Albert would graciously yield their time to her. They have agreed to do that and so Senator Soto, a non-San Diegan is interrupting the

[Laughter}

SENATOR SOTO: Thank you. Is that okay?

CHAIR CAMPBELL: Go ahead Nell.

SENATOR SOTO: Okay, thank you very much. First I have to apologize for having to leave, and I think there is a couple of things I think at some point we have to decide who we are going to educate the public, because I think that's long in needing that. We have to do something in order to help prevent this, or at least minimize the damage if and when it does occur again. The other thing that I think we ought to do is make sure that if there are anymore that we have a way to meet the expenses that it's going to – and that's what that **Cortisend** initiative is going to do that Senator Burton and I are hopefully will be able to either get through the legislature or put on the ballot. So, there's a couple of things that we can do with that, but I would like to get the support of everyone on that because it's really going to mean that we're going to need a lot of money and that's only a quarter-cent for two or three years and it won't – it's sunset after a while when we think we have enough money to help prevent the same kinds of disasters that we had even though it won't prevent it completely, it will help to minimize some of the affects that it would have, so I would ask for your support on that and you can keep up with that. I don't have a number for the bill yet because Senator Burton and I are both working on it and he is really, really determined that we are going to get something for that, so I would like your support when we do come up with a number of the bill. I'm very, very grateful to the people who helped with the fires. Very grateful for the fire departments and the forest service department and all those that had a lot to do with it. I don't think we can thank them enough for the work that they did and the work that they do putting their lives on the line all the time and again with that, I'm going to excuse myself as I have another important engagement, not that this is any less important, but

sometimes you have to draw the line somewhere. So again, thank you very much for having me Bill and I know that I'd probably take more time than anybody else on this ballot, but I think it's worth it. I'm really glad that we're here, but I do hope that we come up with some type of recommendation. As I said a little while ago, I hope it isn't just another exercise of futility. I hope that we really do something about it and even if we have to appoint a watchdog committee to see that some of these recommendations are done and perhaps we ought to consider that. And again, thank you very much for allowing me to be here and helping me in trying to solve some of these problems. Good afternoon.

CHAIR CAMPBELL: Thank you Senator Soto. Before you leave, I'd like to commend all the members of the legislature who are here today.

[End of Tape 2, Side A]

(**UNIDENTIFIED MALE SPEAKER**): …of your agency and your recommendations were going to be represented or presented to the executive committee on interoperability or the AB 2081 commission of the state.

CHAIR CAMPBELL: I personally have not been contacted and I don't believe staff has either.

(**UNIDENTIFIED MALE SPEAKER**): So you don't serve on either one of those bodies?

CHAIR CAMPBELL: No, but we would be happy to provide any information that you would like…

(**UNIDENTIFIED MALE SPEAKER**): You don't have an association, or an agency that you could forward these to, to have the recommendations presented there?

CHAIR CAMPBELL: We can do that, yes, through the California Fire Chiefs in Southern Communications.

(**UNIDENTIFIED MALE SPEAKER**): And in particular your observations from the Cedar and Paradise Fires.

CHAIR CAMPBELL: We will do that.

(**UNIDENTIFIED FEMALE SPEAKER**): My question was back to this issue of standards and you said that you thought that the state should go ahead and take the lead on setting the standards. When Sheriff Craig spoke, he talked about the fact that in order to access federal money, you actually need to have adopted the federal standards. Should the state mandate federal

standards? Should they mandate different standards?

MR. MUNRO: Well, let me go back to how the State of California handled 911. Back in the '70's, the State of California and the legislature passed successful legislation that funded the 911 program and that is still in existence today, and what it did – the net effect of it was in summary, it basically said if you want to wind up having your primary source answering points across to those phone lines paid for, then you have to use equipment that's tariffed by – approved by the State of California. Otherwise, you can use whatever you want, but if you want to get our money to pay back for that, then you've got to wind up using the standards, the standards that we're saying have to be used. I don't know of any 911 system in the State of California that doesn't take advantage of that. So, really, at some level, whether it's at the state level or the local level, some process has to be put in place that says what standards do you want public safety and what we're saying I think collectively is that this Project 25 is the smartest standard to go forward from. And then you wind up defining a money string for us to be able to replace our systems with. Because this is the problem. This is not going to be one-time money. Grant money is great, but it's being misused in this area for interoperability. It's not a long-term solution.

CHAIR CAMPBELL: Director Williams from the Forest Service.

DIRECTOR WILLIAMS: Thank you Mr. Chairman. Mr. Munro, I believe you made a comment that I think we need to pay attention to and I think it bears some comment. You know the statement that despite the fact that we're spending 40 or 100 million or more on these radio systems is being exceeded by the growing size and severity of recent wildfires, I think is important. It seems enormously important for us to understand, I think at this point, that without paying attention to the causal factors that fuel these fires, and I'm talking now about the volatile fuels that dominate these landscapes in Southern California, without paying attention to that, we can make huge investments and communication systems and coordination systems and command and all the other things that we can do that would have little or no real benefit under extreme burning conditions again without paying attention to the factors that predispose these highly intense, severe, rapidly growing wildfires. I'm not sure that Humpty Dumpty and All the Kings Men and the most expensive radio systems that we could ever imagine would ever keep up. The tin cans with the string don't work anymore.

CHAIR CAMPBELL: Okay. CHIEF BAMATTRE and the City of L.A. representing Metro Fire Chiefs.

CHIEF BAMATTRE: Thank you. I just want to revisit a little bit the issue about the capacity and make sure I understood that. If I understood what you said, it's during that period, whenever that was, three, five days, you had 265,000 busy records.

MR. MUNRO: Yes sir.

CHIEF BAMATTRE: And that 24 times the – then what you're saying is during normal times you would normally have over 10,000 busy –

MR. MUNRO: The time period turns that 265,000 may have been the month, instead of that five days. I think it was the month of October, so I was mistaken in that. In the normal month of October – in a normal month we would have in that period about 4,000 busies off that and that in our mind is unacceptable.

CHIEF BAMATTRE: And that's what I wanted to – in looking at the agencies that you have on your system, so there is no priority system for emergency traffic versus –

MR. MUNRO: Sure, absolutely.

CHIEF BAMATTRE: Yes.

MR. MUNRO: It's a trunk system. It's just not simulcast. The other two portions of it are simulcast –uses a different technology and it makes it much more effective use of the frequencies.

CHIEF BAMATTRE: So then you're getting that many busies on a – even with a priority system.

MR. MUNRO: Yes sir.

CHIEF BAMATTRE: And so then – I think what I was trying to have us – the commission to understand is that the answer may not be looking to be on a common system, but maybe to have some separation based on that capacity because I think Gary was just saying, I always tell my people plan on the radio system not working, because inevitably every major emergency it doesn't work, and maybe General Lee was in better shape than we because he didn't have the radio system. But I think that's important because if we put all our eggs in one system and have this type of incident that is what the radio system is designed to deal with, are we better off looking at maybe two systems, so that we can avoid having the over-capacity.

MR. MUNRO: It's quite possible. I mean, we've got a situation in our north cell where we have 19 frequencies that are providing capability to, I think it's 16 or 17 sites and these county portion of the system of the – portion of the system than we have – because it's a lower density populated area and more rough country, it's not traveled as much. It was designed for anywhere from three to five or six channels per repeater and we're not elite to like the other – the other system that's – so if you wind up having four channels on one of these mountaintop sites that are busy with calls already and the fifth is used by the control system, and you're going to get a busy on the sixth call, and normally – normal operations that would happen about 4,000 times a month, which is not satisfactory, that's why we've been trying to get an upgrade since 2001. But in this instance, it was just totally over the top.

CHIEF BAMATTRE: Thank you.

CHAIR CAMPBELL: That 264,000 is more than four score and seven.

MR. MUNRO: Yes sir, it is.

CHAIR CAMPBELL: All right. Secretary Verga.

MR. VERGA: Thanks. The Chief asked one question I had about prioritization, but also, does this same system carry data to other locations?

MR. MUNRO: No. The level 5 systems are – from some vendors they mix voice and data. We chose not to. That's another good point. I'm glad you brought that up because the other – what we've had to do with our networks is we have a separate voice system and a separate data system, so the two are not mixed. And that way you conserve your capacity on your voice system and it offloads some of the redundant conversations on the data, where we can handle it. But with a P25 platform, then you've got potential right now, being able to mix voice and data on the same network. You have potential upswing in terms of the future and what's going to be developed. And one other point that I really think it's important for everybody to remember, Don we've talked about these frequencies being refarmed and the size the frequency progressively getting narrower. When that happens, all of the existing VHF equipment, let's say if they refarm the VHF, it's out the window. You're going to have to buy all new equipment anyway. So, does it then make sense for agencies to start thinking about the advisability of upgrading to a platform that's going to enable you some graceful migration instead of just ditching those radios?

CHAIR CAMPBELL: It certainly will help the economy. But not necessarily the taxpayer.

Excuse me, go ahead.

(**UNIDENTIFIED MALE SPEAKER**): Do you have contingency procedures to move certain traffic from voice to data in an emergency?

MR. MUNRO: Yes sir, we do. As a matter of fact, what we did was we wound up for lower priority users, we moved the ability to affiliate any of these sites that were busy during the fire. So, we do those things from a control perspective at the – our primary system center.

(**UNIDENTIFIED MALE SPEAKER**): I think you can conclude then, one of the things we have to look at, as the prior speaker had mentioned, and that is to take and work with the local agencies if it's a state agency, Highway Patrol or Forestry, if there are systems locally that can be shared, we're going to get a greater scale of economy and efficiency out of those, instead of having to add more mountaintops, can we share those facilities and that infrastructure. I think that's going to be a smarter way of government than to have my own system for my agency and I have to go for whatever my service area is. Where can we share those systems? We're doing it right now in San Diego with CHP and Cal Trans. Cal Trans does several other systems. Can we expand upon those and build? We're still going to end, I think basically at two systems. We're going to have some type of everyday system and then a larger overlaying system.

CHAIR CAMPBELL: I think you ought to share with as many people as possible like the Cal Trans, the emergency medical, which I think you probably already include.

MR. MUNRO: Yes.

CHAIR CAMPBELL: I think you ought to even bring in the utilities because every time we have one of these fires, you're involved with the – in your case, San Diego Gas & Electric, have major problems also and they need to be included where they go in and what they need to do and where it's happening and if you just sit down and think about it, a lot of other agencies that ought to participate can help fund something like this. I think it's a great idea.

(**UNIDENTIFIED MALE SPEAKER**): And I think that's where the P25 standards because SDG&E does have an 800 system, although they chose a different vendor, so we do have limited interoperability right now, but we do have it. At that point when we all migrate to that scenario, we'll have a lot more interoperability. That's the leadership that I would look for out of this commission is to address funding and interoperability standards and so this is where we need to be going as a state.

CHAIR CAMPBELL: Thank you very much. I appreciate you being here today. I appreciate your testimony. Our next testimony will come from Chief Tom Tisdale of Riverside County. Chief, we're in your area. We feel very well protected today and I want to thank you.

CHIEF TISDALE: Honorable Chairman, distinguished members of the Blue Ribbon Commission, my name is Tom Tisdale. I'm the unit chief for Riverside CDF. I'm also appointed as the Riverside County Fire Chief and the Fire Warden by the Riverside County Board of Supervisors. As part of a fire protection contract in place since 1946. Several of my fellow fire chiefs are here today and I'd like to thank them publicly for their continued support.

CHAIR CAMPBELL: Riverside. You're the only one here today that has two bosses sitting on this commission.

CHIEF TISDALE: I've got a whole bunch of bosses sitting here. I work for all kinds of people here. Yeah, don't get me started, I can't count them all. The Riverside County Fire Department is the fourth largest fire department in the State of California. There's a full service all risk fire department providing services to the state responsibility areas, the unincorporated communities of Riverside County, as well as providing full fire protection and emergency services to 17 of the counties, 25 cities. Riverside County Fire Department serves 1.5 million residents in an area covering 7,000 square miles. Our response areas vary from low lying deserts to mountainous terrain and encompass all types of development from open and rural ends to urban, industrial and metropolitan cities. The County Fire Department staffs 93 fire stations with approximately 900 paid firefighting personnel and approximately 1,200 volunteer firefighters. The services Riverside County Fire provides include fire safety education, prevention, planning and engineering, law enforcement arson investigation, fire and the MS training, the County of Emergency Services. We also operate two type I hazardous materials response teams, three mobile communications command centers, two of them which are parked outside today, a full service fire emergency responses and full EMS services. In fact, we are the largest based ALS provider in this county. In addition to the CDF, county and city fire responsibilities that I have, I am also the State Office of Emergency Service's Fire and Rescue Operational Area Coordinator for Riverside County, a position I proudly fulfill after being elected by all of the fire chiefs within Riverside County. Although the position has a fairly minor coordinating role during normal non-emergency periods, it becomes very important, even critical during major emergency response

operations such as we had in 2003. I could not have functioned in this position without the full support and commitment given by this county's city district and tribal fire chiefs. Riverside County has an excellent reputation of providing a fully integrated, highly cooperative, regionalized fire protection system, capable of providing the highest level of fire EMS protection and services to all of the citizens and visitors that live in or travel through Riverside County and all of it's cities. Although there are 25 cities within Riverside County, our Fire Departments all come together anytime there is an emergency, dropping city, district and county boundaries and providing service to all. This cooperative attitude was not achieved overnight and it has been worked on and improved upon for many years and will undoubtedly continue for many more. The Master Mutual Aid Program works very well in this county because of our fire chiefs commitments to these cooperative efforts and constant coordination to ensure our individual departments protection requirements. As a result, there are many times we protect each other so that Master Mutual Aid resources can be sent outside of our county. It is because of this extraordinary relationship and the cooperative efforts of all of our departments, that Riverside County is able to keep the fires within our county relatively small, quickly contained and controlled.

In 1971, following a devastating fire season in 1970, the California Fire Services were severely criticized for failure to provide leadership and solving issues of cooperation, command of control, communications and training. As a result, a five-year program, Fire Scope Firefighting Resources of Southern California organized for potential emergencies was funded, organized and implemented. The following elements were designed: Incident command system, multi-agency coordination system, information management system, technological support and common communications. Fire Scope continues today, although some important elements have been weakened, dropped or ignored by some fire departments. I'm very proud to say that all fire departments in this county are full supporters and implement the Fire Scope Program principles and procedures.

During the fire season of 2003, Riverside County Fire Department, Riverside CDF Unit, and all of the city, district and tribal fire chiefs assembled our local multi-agency coordination structure. We began daily conference calls, sometimes multiple calls daily to coordinate all of our actions and support for the numerous incidents inside and outside of our county. I'm very proud to say that we had 100% participation from all fire departments in this command effort and each department provided all resources support and

personnel that was available to them. The Riverside operational area sent 19 fire engine strike teams to surrounding county's fires. In addition, numerous single engine increments, individual fire engines, were sent as well, as well as over 200 fire management and support personnel from all of our departments. Interoperable fire department radio communications in Riverside County operational area is another area all of our fire chiefs subscribe to and fully support. All of our operational areas departments have the ability as provided for in the Fire Scope Communications Plan to provide for common communications by utilizing a standardized frequency band, VHF, and enhanced 48 channel standardized radio frequency plan. This gives the fire departments the ability to talk between all fire units on scene or responding to emergencies. With this system in place, we're also in a very good position to receive mutual aid resources that respond into our county, as long as they have the FIRESCOPE recommended common communications plan. When we have resources come into our county without this capability, this county has built in the ability to issue fire ground radios to give them that capability while assigned to Riverside County. There are currently at least six fire department mobile communication command centers within our county. One CDF, two county fire, one OES, one Corona City and one Riverside City, that have full radio capabilities, including most with cross-banding or radio interconnectibility. The County Fire Department has several portable radio repeaters that can be deployed in the field that round out our interoperable incident support communications. During the fire season of 2003, the fire situation in Riverside County paled when compared to our surrounding counties. During this period, our county suffered three wild land fires. The Pass Fire in the Reno Valley area, the Mountain Fire in the Sage Connecul area and the Wellman Fire in the Anza area. Ranging from 100 to 10,331 acres and costing almost four million dollars to suppress. All of our fires were contained in a short period of time with initial attack and minimal extended attack resources, directly attributed to the efforts of all our cooperators responses with us, and the fact that there was no equipment left. As with almost all of the Southern California fire agencies, all of our fire fighting and support personnel had been ordered back to duty and all of our fire apparatus, including reserve units, were fully covered, enabling our department and others to provide a much higher level of response than normal.

The last area I'd like to discuss is the subject of fire safe councils and mountain area safety task force. The county and some of the cities have formed several fire safe councils that have and continue to provide excellent direction and coordination for fire safety and preparedness in their respective

communities. We work closely with them to make sure our efforts are coordinated and we provide as much support logistically and administratively as possible. The Mountain Area Safety Task Force, known as MAST, was formed to address the bug drought tree kill problem in our mountainous areas. This task force consists of members of all disciplines from cities, districts, county, state, federal, utilities and citizens, including fire safe council members and other local stake holders. This task force is coordinating all of the activities, grants and efforts to attempt to mitigate the extreme fire hazard conditions currently found in our mountain communities and work towards a healthier forest and safer conditions. State and Federal departments have been working on clearing dying and infested trees for several years as part of the zone of infestation declaration that was declared by the state in the 1940's. A much more aggressive effort has been instituted in the past two to three years with the grants and funds being provided by the state and federal governments for tree removal and other mitigation efforts. The top priority is for the safety of all people on the mountain and most of the effort by state and federal crews with securing of the designated escape routes out of the area and making sure they be kept clear of fallen trees. Southern California Edison has recently launched an extremely aggressive campaign to clear trees from their utilities from pole to pole and pole to house or buildings. This will greatly enhance the efforts of the state and federal crews. The County Board of Supervisors have made a big investment in the efforts by providing funding to the fire department to hire private tree contractors to remove dying trees from private property. Some utilizing a cost share agreement between property owner and the county. It is anticipated that if there is a wild land fire in any of the areas that the MAST is concentrating on, the MAST Incident Action Plan will be looked at closely and integrated into the fire fighting IAP.

I would like to conclude this; I'm proud to be the CDF Unit Chief of Riverside. I'm proud to be the Riverside County Fire Chief working for support of Board of Supervisors in all of the cities and other bosses that I serve. I'm very proud to be a member of the Riverside County Fire Chief's Association where I have the opportunity to work daily with some of the most progressive fire chiefs in the state. But most of all, I'm extremely proud of all of our firefighters, who everyday put forth and all-out effort for all of our citizens and who perform heroically during the fire season of 2003. Thank you Senator Campbell and distinguished commission members for this opportunity to make this presentation. It was an honor.

CHAIR CAMPBELL: Chief, thank you very much. Any questions?

MR. VENABLE: Yes, thank you Senator. I don't have any particular questions, although I do have four that I don't think you can answer. I don't believe you can answer those today and if you don't mind Senator, I have a copy of my little statement that I would like to pass out to all the members.

CHAIR CAMPBELL: Absolutely.

MR. VENABLE: And those four questions are at the last of the statement and we can take that up at our last meeting.

CHAIR CAMPBELL: Okay, and that'll become part of the official record.

MR. VENABLE: That would be very good. I am the representative of Riverside County. I felt I should just listen and observe at the previous meetings, but since this meeting is in my area, I want to take this opportunity to make sure some comments are made and I'd like to ask a few questions that we all handed out right now. I perhaps should also let the other members of the commission know that I have some background in firefighting, as I have owned and operated an aerial firefighting company for over 40 years, so I believe that I might have some unique perspective regarding these October fires.

I was privileged to attend the Wildfire Summit 2004 that was held right after the last Blue Ribbon Commission meeting down in San Diego. That group of people worked to put together a very specific statement of the problem we were currently facing in California and that problem reads, wildfires are burning too many homes, killing too many people, destroying the environment, and eroding homeland security. That statement really does hit the nail right on the head. In California right now we have nearly 45 million acres of land that are ready to burn. Last October's fires were absolutely terrible, but we are still facing an even worse situation; one that could be the largest disaster California has ever seen. Many of these acres that are at risk of burning are right here in Riverside County. In my district I personally have an overwhelming concern for these statistics. Many of the things we have discussed in these meetings point us to a fact that many of us seem to forget, and that is there are four cases of emergency management; preparation, mitigation, response and recovery. We have to work together with all stakeholders wherefore any emergency start in the preparation and mitigation phases to be sure we have developed the necessary plans. Questions posed to this commission in the past such as, can we communicate with one another; we've been doing that all day today. Do we have need to have evacuation plans? How do we activate the emergency broadcast system? And when? All these things should be worked out in the preparation phase.

As you have heard from our Riverside County Fire Chief, Tom Tisdale, knowing that we are facing an unprecedented fire threat in the county due to our dead trees, we declared a local emergency two years ago. We developed our Mountain Area Safety Task Force, which includes fire, law enforcement, Cal Trans, utility companies, flood control, conservation districts, fire safe councils and so forth. Our Board gave plenty to help residents remove trees and (**unintelligible**) emergency generators and chippers to help with that process. We also lobbied our state and federal agencies and elected officials nonstop to help us with this overwhelming problem. We certainly did not receive all the resources, funding or personnel that we asked for, or that we really needed, but I am confident that the preplanning that we did do and are continuing to do, makes a real difference for our county, our emergency responders and our residents. There are some things that I want to bring to this commission's attention that are even more at the heart of this issue than our recent planning efforts, and that is that those of us who are elected to serve our constituents have to involve ourselves much more in these fire preparedness and mitigation issues. In these commission meetings, we have been calling the Forest Service and CDF (**unintelligible**) for some of the short calls that occurred in the dealing with this fire siege and some of that blame is justified, because both of these entities have a responsibility to care for our forest areas and to suppress wild land fires and something that can be learned from every fire that is fought and both organizations should not be afraid to take a good, hard look at what happened, tell us all the truth, and really look at how they can do things better in the future. But it is just as important that those of us who are elected officials take a hard look at ourselves also. We need to ask ourselves, how will this report that we are a task to putting together be any different from hundreds of past reports that have been compiled in the aftermath of terrible fires over a lot of years. Almost every report has the same list of things that need to be done to manage wild land urban interface in California. We know we need better communication capabilities, standardized wild land fire training, policies to reduce the hazardous fuels, stricter building requirements, and we do not need to study the situation anymore. Bottom line, we know what to do, and we should just better get started doing it. The problem is, that we have expected the fire service agencies to handle everything, time after time. When one of my staff members or I attend a meeting on fire preparedness issues, we are the only ones in the group from local governments. I know that this group was told by some fire personnel in one of the earlier meetings that sometimes we politicians just get in the way, and during the response phase of a fire, that

might be the case, but if we don't start getting fully involved in preparedness and mitigation process and make this something that we all work together, we will be forced to face devastating fire seasons over and over. I believe that in order to make a real and lasting change, this commission needs to work with the League of Cities, California Association of Counties and get involved in pre-fire planning on a continual basis. In this room, it has already been started. Just yesterday at the CSAC Agricultural and Natural Resource Committee Meeting, there was a call to action given. The committee is asking for a governmental entity at all levels to cooperate and collaborate and communicate in the development of better land use policies and wild land fire management programs.

This coming Tuesday, I'm going to ask my colleagues on the Riverside County Board to adopt a resolution supporting what CSAC and the League of Cities are doing. And I assure you, that my staff and I will continue to stay involved long after this commission completes it's work.

Another major recommendation that I have for this commission, is we need to find a way to take the management of our public resources out of the courts and place it back in the hands of our competent fire professionals. A report from the Federal General Accounting Office published in June 2003, stated that 59% of all fuel reduction activities in the United States was stalled or stopped due to litigation. In California, it was 68% of all fuel reduction activities that were slowed or stopped by legal action. In a recent House Resource Committee meeting on that subject, it was disclosed that the government has spent nine million dollars in the last three years in litigation. This is a complete waste of taxpayer's money, and I'm calling on this commission to help identify a way for it to absolutely be stopped. The population of the State of California is growing at a record pace. In Riverside County alone, we expect our population to double in the next 10 years. Wild land urban interface fires will continue to be a fact of life. As stated by the wild fire summit participants, these fires can destroy our people and their property. These fires can take a devastating toll on our environment and our water shed, and full recovery can take many, many years. This commission needs to make a call to action to all political leaders of this state at every level to change the way we deal with the wild land fire problem in California. We have to fully involve ourselves in this process and make a commitment to stick with it until we see the results our mutual constituents absolutely deserve. As Abraham Lincoln stated so well, a nation with no regard for it's past will have little future

worth remembering. Let's make the terrible lessons learned from our October fires our blueprint for the future.

My four specific questions that need to be answered when we meet with our final get together here with this commission. Number one is truthfulness. This is more of a request than a specific question, although all the meetings I have attended, it was a major topic. I would like to call on all our agencies represented in this process to be 100% truthful with this commission. I feel that up to this point, this is absolutely not been the case. An example is I recently read an article titled, *California Recovers* in the January/February 2004 issue of *Government West*.. The article says that the state and CDF recognize the threat caused by dead trees in our mountains in 2001 and began then to take corrective action. Unfortunately, that was not the case. I recall that we were still trying to get the attention of Sacramento as late as spring of 2003. I am not one to engage in finger-pointing, and I only mention this to emphasize just how very important it is to be truthful and to be willing to identify how we can do things better in the future. We have to put the past behind us, but we better learn from that past.

The second question, the environmental issue. Is there anything specific that the agencies that are represented here and recommend that we can do to help curb the court process that slowed down or completely stops needed fuel reduction activities?

The third question, after action reports, have all agencies done an internal review of how they respond to the fire siege? If so, will those reports be made available to this commission? Now I know we have seen some documents, but those have been more of a chronology for the county of the fires, rather than a real hard look at what could be done better in the future.

The last question, is commission assistance. Bottom line, how can this commission help you? We are only here to find ways to make this kind of devastating fire to never happen again. What message do you need us to carry back to the governor?

I want to thank Tom for your presentation. We really appreciate that and I would like, Mr. Chairman if you would, enter this into the record so we can get these questions answered.

CHAIR CAMPBELL: Thank you supervisor. That is an outstanding overview of the situation with which we are confronted and I appreciate your time and effort in brining that forth to us. It will become a

part of the official record of the committee. I thank you very much for your efforts. Any questions or comments from members of the commission?

SENATOR HOLLINGSWORTH: If I could just correct my friend and local colleague Supervisor Venable that Sacramento in certain portions was paying attention. I recall your attention to the letter that all of us signed and the urgent plea in the legislative delegation from San Bernardino and Riverside counties sent – and many of us in San Diego County also, with forested areas, sent both to the Davis Administration and the Busch Administration for OES and federal emergency declarations for the veto problem, so you can paint Sacramento with a broad brush, but I wanted to distinguish myself from that.

CHAIR CAMPBELL: I want to reiterate something that I said last week. Politicians typically do two things. They point with pride, or they view with alarm, and we're viewing with alarm the fire and pointing the pride with this report that we're going to submit to the governor and I would remind you all our deadline is April 5th. I would also at this time, because we have most of the members here now, remind you that our next meeting will be February 19th, Thursday close to Mesa Hilton in Orange County. And then the next meeting will be on March 18th in Los Angeles, somewhere near LAX.

ASSEMBLYMAN LASUER: There are a couple things that I thought were pretty interesting in the statement that was read, and I agree that wildfires are burning too many homes, killing too many people, destroying the environment and (**unintelligible**) homeland security. There were a number of questions asked. I'd like to ask along that line, and so – he asked about truthfulness. I'll tell you my opinion up front. I've been told by my constituents – you know for a long time this state built freeways, and now they are building fire ways. Did you not allow us to clear the brush and what they do is they set a fire way so we can't escape and we can in no way take any mitigation against would face severe penalties. Do you agree with that in any way or not?

CHAIR CAMPBELL: I'm a little bit confused.

ASSEMBLYMAN LASUER: In other words, we have set aside all this property and we don't do anything as far as control burns or anything like this, or clearing the brush, or dead trees. We have bark beetle problems to spare in my county and there's no way to stop that fire when it gets going in some of those areas.

CHAIR CAMPBELL: Jay, let me take a shot at that. I think one of things that we want to look at is, and we did look at, and I think we may want to revisit at our next meeting, is the issue of clearance and the whole – we did most of this up in Ventura County, but I think we probably want to – the land use issue and the zoning issue and things of that nature, so but I understand where you're coming from. Yes, we have a – we need to take more action in this area and I think the committee will probably – the commission will probably make recommendations in that area.

ASSEMBLYMAN LASUER: Let me ask you one other question then. In regards to CDF. CDF – you have too broad a scope of responsibility or should it be limited to firefighting and saving of lives and structures and wild fire situations?

CHIEF TISDALE: I can only speak as a CDF chief for Riverside.

ASSEMBLYMAN LASUER: That's all I'm asking.

CHIEF TISDALE: I don't believe that we're out of our league, or out of our line or anything else in Riverside County. We provide a full-blown fire protection system, fourth largest in the state, so we must be doing something right here. As far as a statewide mission, now I believe they are doing everything they can and I believe they do it very well.

CHAIR CAMPBELL: Chief Wright, do you want to take a shot?

[Laughter}

CHAIR CAMPBELL: Excuse me. Take a shot is the wrong term.

[Laughter]

CHAIR CAMPBELL: Do you want to answer that question?

CHIEF WRIGHT: Yes I will, and as I understand it, are you asking, do we have too broad of a responsibility? Are we stretched too far that responsibilities that we're engaged in –

CHAIR CAMPBELL: You mean, too many cooks in the kitchen, or too many things to make or some or another.

CHIEF WRIGHT: And I'll go back on your first question as well as in dealing with vegetation management, if I can. There are hurdles that are in our ways in dealing with fuel reductions and modifications throughout the state and we do have to work on that, and that was the topic that we had in our meeting in Ventura County. So, we can follow up and have some discussion later on that because I

know specifically you had questions on that with an earlier matter. But as far as CDF, is an organization. As you know, CDF is responsible for resource management as natural resources within the State of California and also the protection – fire protection of those lands. As a department whole, we are a unique organization whereas we were the largest firefighting organization in the state and with that, it's a combined effort between our resource management and our fire protection organization that we come together as a total, total organization body to deal with both of those aspects. The management, resource protection and also the fire protection as well. And other emergencies that we tasked to respond to. The question of anything of Mission Creek, no, we've kept up with that. Unfortunately, like I've mentioned earlier, we're dealing with fiscal budget matters and in the case in Southern California, how things have evolved. We're still struggling with a year round fire threat season and we're trying to manage it on a eight-month checkbook.

ASSEMBLYMAN LASUER: The reason I asked the questions is something that the supervisor said and I've had remarks made to me by some of my colleagues with regards to this bark beetle and one of the colleagues of mine, his area encompasses Lake Arrowhead, and of course, in the back country of San Diego, all one has to do (**unintelligible**) is still left, is just take a look and that's dead trees everyplace. That's the fuel and sometimes it seems like maybe your forest management responsibilities get in the way of your firefighting responsibilities in regards to prevention, because those trees are not being cut, the supervisor is right. I haven't seen any cutting, we had tremendous problems getting it cleared according to my colleague in the Arrowhead area, so that's what prompted that as it seems you're playing tug a war with yourself.

CHIEF WRIGHT: We are struggling with personnel reductions in our resource management side of our organization. This problem is just a tremendous thing. It's going to be multi-year to deal with that. The work involved, we're engaging as many firefighting fire crews as we can. Just recently, we are dealing with a reduction in our fire crews through collateral damage from budget reductions from our cooperative agencies, the youth authority and department corrections. So as we're trying to keep up with this work through collateral damage of other departments, we're losing resources, and it's going to have an impact on us as we continue to –

ASSEMBLYMAN LASUER: --your job in a way, I spent my career of 31 years in law enforcement – that would be like making me a law enforcement officer and a probation officer at the same time. So I hurry up and get him in jail here and I get him out of jail over here. It seems like that's what you guys are charged with doing, and sometimes it looks to me like maybe you guys are just working against yourselves and that hurts the public.

CHIEF WRIGHT: I'm not so sure I totally understand the concept of working against ourselves. We're doing the best we can with the resources we have available to us.

CHAIR CAMPBELL: Was that a rhetorical question, or did you want to answer to that?

ASSEMBLYMAN LASUER: I already know my answer. I don't need an answer.

CHAIR CAMPBELL: Thank you. I want to move this meeting along. I want to make a couple of offerings. Our final presenter today will be a Supervisor Gary Gilbert representing CSAC and he will get into some of the issues of land management and waste clearance.

(**UNIDENTIFIED MALE SPEAKER**): Mr. Chairman. Quickly before we move on in response to –

CHAIR CAMPBELL: No, I have one before you.

(**UNIDENTIFIED MALE SPEAKER**): Okay.

CHAIR CAMPBELL: And then we'll come back. From San Bernardino County, Supervisor Hansberger:

MR. HANSBERGER: Thank you Mr. Chairman. Just – first of all, that dialogue that just took place prompted a lot of things I'd love to respond to, but I will jump into the (**unintelligible**) in a moment. I just wanted to indicate that I may not be able to be here all the way to the end today and I just want to tell you that our county staff and I are preparing a letter to the commission on some thoughts we have about directions in the future and topics which might benefit from further exploration. I simply didn't want to broadside you with a letter in between meetings. I thought I'd just tell you that we're working on that, but hopefully in a positive sense, the kinds of things we hope might come out of this in the end and those are my only comments for the moment. Thank you.

CHAIR CAMPBELL: Okay. I want to make one other announcement. A memo will go out to all members of the commission that will explain the process we intend to follow in establishing

recommendations and how we will use our final meeting on March 18th, to develop these recommendations. So I think what I'm trying to say, it's kind of important that you be at the – you'll get the memo, but it's important you be at the March 18th meeting as we put together the final recommendations for the governor. From Senator Feinstein's office.

SENATOR FEINSTEIN REP: I just wanted to point out and respond to Supervisor Venable's comments. Supervisor Venable and his staff has been excellent in keeping Senator Feinstein's office informed of what's happening in Riverside County, but the recently passed Healthy Forest initiative does contain provisions that would help streamline the environmental process, and so for the next hearing what we'll do is we'll make sure we bring a summary of those provisions to the bill so that they entire commission is informed on that.

CHAIR CAMPBELL: And I might add, we are extremely grateful to Senator Feinstein for her actions on behalf of our problems here in California.

SENATOR FEINSTEIN REP: Thank you.

CHAIR CAMPBELL: Send our personal thanks to her. Oh yes, go ahead.

MR. WOLF: Chief Tisdale, an excellent report. I've been a Riverside CDF person. I've got to tell you, I'm very proud of it. It was very excellent. Just – I would request with the permission of the Chair, you talked about the reductions to resource management, that concerns me because that would be the very individuals that would be going out and implementing any modifications or reductions to fuels out there and we are – my understanding is we are currently under possibly a losing almost all of them, if not a large majority of them, right now as it stands, and I would ask the Chair, because I think that is crucial, that it really wasn't discussed here about doing the modifications that I would like to see some type of report at a subsequent meeting here come forward and let us know what the impact of that's going to be. What's being reduced and if that reduction happens, what will be it's affect on the ability to the department to do whatever we come up with as commission.

CHAIR CAMPBELL: Bob, we're – the only problem is, we're running out of subsequent meetings.

MR. WOLF: Maybe something for the record and about a five-minute report would be great.

CHAIR CAMPBELL: All right.

(**UNIDENTIFIED MALE SPEAKER**): One question Chief Wright. If you were able to get more mitigation funding, how much would that save you in suppression funding? When we see such disastrous fires like this. In other words, if mitigation funding was your agenda, your crews and the inmate crews were geared more directly to serve that interest and I think that Senator Soto brought that up once before, how much money do you think you could carve into savings from the suppression site of the buildings?

CHIEF WRIGHT: I don't know a specific number of savings because there's so many factors that could be placed against that. Obviously prevention is always the better and you ultimately save, but if the world were perfect, and we had all the money we needed, and all the resources that we needed, we could go and continue and do a good job. It's a lot of work up there. We realize that, what have you, but there could be conditions of such that we could experience another Santa Ana wind condition and under those conditions ran by mother nature, she makes the shots on that. And, you know, another devastating fire could occur. So, it's really hard to say for, you know, a hundred dollars, you know, there are some rules of thumbs out there – invest a hundred dollars you save, you know, a thousand or something in that nature, not specific and just as an example, but it's not to say that another devastating fire wouldn't occur.

(UNIDENTIFIED MALE SPEAKER): I understand that.

CHAIR CAMPBELL: Okay. Thank you very much. I – because Assemblyman LaSuer is a new member today of this commission and missed the first four meetings, he has asked for one more question.

ASSEMBLYMAN LASUER: Chief Wright, how many trees dead from the bark beetle in San Diego County have you cleared?

CHIEF WRIGHT: I don't have an answer on exactly how many trees. I know there's hundreds of thousands of acres of dead trees throughout the San Bernardino, San Jacinto and Palomar Mountains in the inland part of the county.

ASSEMBLYMAN LASUER: No, the Que Macapllaomar, we got rid of those, we burned them.

CHIEF WRIGHT: But that was the extent area of the bark beetle areas.

ASSEMBLYMAN LASUER: Eight percent to ninety percent of the bark beetle dead trees are still there.

CHIEF WRIGHT: That's correct. That's correct.

ASSEMBLYMAN LASUER: And that runs into what kind of a number? A few hundred thousand?

CHIEF WRIGHT: It would be. I don't have an exactly trees per acre, but it's hundreds of thousands of acres.

ASSENBLYMAN LASUER: If it would rain that bark beetle would go back into the ground and our problem would be over, right?

CHIEF WRIGHT: No. The problem won't be over. This has been a historic problem in Southern California for a number of years. It's just been compounded by the severe, prolonged drought period that we suffered down here.

ASSEMBLYMAN LASUER: We were able to control it in the ice age.

[Laughter]

CHAIR CAMPBELL: I apologize, but I know we're going to lose a lot of members here, and I put my flight back to 7:10, and I did that at lunchtime because I knew we were going to run into this problem, but we've got to move along. Members of the commission, if it's all right.

(**UNIDENTIFIED MALE SPEAKER**): Just one quick Senator Campbell. We heard a lot of testimony today regarding communications and I think Chief Tisdale hit a good note there in his report. The common communications, me also as a fire chief in this county, our common communication is very well. If you look in your handouts there is a CDF Riverside County communications here. And I think as a commission we should look at this and for the good things that went well here in Riverside and maybe we can put this together on some of the other communication issues and excellent report Chief. Thank you.

CHAIR CAMPBELL. Chief, thank you very much. Our next presenter is Tom Strickland and Ted Gaines.

[END OF TAPE 2, START TAPE 3, SIDE A]

CHAIR CAMPBELL: Gentlemen, may I remind you of our time constraints.

MR. GAINES: I'll keep it short, sweet and to the point.

CHAIR CAMPBELL: We're very **(UNINTELLIGIBLE prissive??)** of the sweet part, and the short part.

MR. GAINES: You'll have to forgive us, we're a little low tech.

CHAIR CAMPBELL: Let me tell you something. Finally, something that I can see and understand, and I appreciate that.

MR. GAINES: The computer crash, it kind of hurt things. We're going to move on to some newer technology **(UNINTELLIGIBLE)** communication. I think we're, uh –

CHAIR CAMPBELL: That's one of the reasons we invited you. We want to – there are a lot of new technologies out there for fighting fires, and we want to explore what those are and how they work, and what we can do. So let's go.

MR. GAINES: Okay. This one is –

CHAIR CAMPBELL: Show the commission, and after you show the commission you can hand it to Denise and Denise will show it to the rest of the crowd.

MR. GAINES: This is a program that's been around for some time.

[Laughter.]

CHAIR CAMPBELL: This is not a boxing ring, Denise, you're not between the rounds. Excuse me, go ahead.

MR. GAINES: Well, dealing with military, I think that it's very important that we look at building bridges, not walls. And that's been a problem that's been going on for a long, long time. I think we have an opportunity here to improve how we do things, and being a firefighter, we have a serious problem and a serious hole. We make extremely good progress with air support and ground resources. Airplanes don't put out fires, ground powders do. But we lose that advantage every evening. If the winds continue, the progress that was made during the day can be lost, and it's very frustrating for ground and air resources. And, Jim, I am here because of the co-pilot of yours, guy by the name of Dennis Connor. He got me started on this. He's a good man. We need to improve, and the technologies that we need to fly at night are not night vision, that's a fallacy. We need comprehensive systems of navigation, terrain following, and the only ones that possess that technology and we spent billions to get, was the military. And the military is willing, ready, willing, able, to rent that resource to us anytime we call upon it, and work with us. We're talking active, not just, uh, these technologies, and the program is called DPADS, they love alphabet soup, and what it stands for is Dual Purpose Air Delivered Store. What it is, is a practice balm for the military, aircraft that are in question or tactical fighters. There's a lot of aircraft, close to 4,000 among the four types

that I'm recommending. There's a price sheet that came with it based on 2001 dollars, and you'll notice that they're in the same dollars as our air tankers right now. There is no conflict because they'll fly the night missions, be it National Guard, Reserves, or active.

CHAIR CAMPBELL: Do they fly higher and out of the winds, or do they - -

MR. GAINES: They fly slightly higher, but it's closer support practice, and they drop a canister, not a liquid slurry, so it tends to stay on target very well. And it's not the pilot doing the drop, it's **(UNINTELLIGIBLE)** system, things that we paid dearly as 20-year-old technology.

CHAIR CAMPBELL: We were talking earlier about the Predator, because of its ability to hover around an **(UNINTELLIGIBLE)**, at the same time use the **(UNINTELLIGIBLE)** to get through the smoke and the haze and everything, because during the night time you lose control over fire, and until dawn sometimes you don't know where it's going to come out.

MR. GAINES: That's correct. Each one of the aircraft that we're looking at possesses the technology, and each pilot that makes each run. We're talking about Lantern and its derivatives that the Navy used. I wanted to introduce an engineer from China Lake who I've been working with and who is my coordinator within service engineering. This is Tom Strickland, and he can answer a lot of your questions on the technical side. Now uh, we're looking at, had to develop something that fit the aircraft that can do this mission. It's unorthodox, it may be. But in 1947, that's exactly the report I have sitting here. This is where it all started. The Air Force and the U.S. Forest Service actually did a lot of testing, and every one of those recommendations are in this report, and I can have copies sent to you.

CHAIR CAMPBELL: We'd appreciate that.

MR. GAINES: And, I've answered every one of them. Every one of the recommendations, even to the point of biodegradable materials so that safety is better. Let's face it, we need to change tactics if we're going to use this.

CHAIR CAMPBELL: Okay. Thank you.

(UNIDENTIFIED MALE SPEAKER): To keep people safe.

MR. VENABLE: If I could just make one statement. There was an airplane before these that started all of aviation firefighting, and that was the **(UNINTELLIGIBLE)**.

(UNIDENTIFIED MALE SPEAKER): Yes, sir. And a lot of the testing that was done was right over at Camp Pendleton, and that's where I recommend we go back.

MR. VENABLE: Very first drops ever made by a steerman was made in Idyllwild in Garner Valley, and I was flying the airplane.

CHAIR CAMPBELL: There you go. You were flying it! There you go.

[Applause.]

CHAIR CAMPBELL: I especially want to thank you, Supervisor, you make me feel young.

MR. GAINES: DPADS is the thing. And that's just one of many tools that military possesses, and what I'm recommending out of all of this is that we adopt a program that I came up with years ago, and it's called NIFTT, and what it stands for Night Interdiction for Firefighting and Tactical Training. We get a new tool, the military gets training. And what we do is put the operational people with fire and military, sit them down, let them talk, because the fire people don't know what the military can do for us –

CHAIR CAMPBELL: Is the military located close enough around California to be able to utilize their equipment to do this?

MR. VERGA: Yes, sir. **(UNINTELLIGIBLE)** is one of the premier bases to step forward **(UNINTELLIGIBLE.)**

CHAIR CAMPBELL: And you can get the home phone number of General Myers. But I'm still looking for, it got lost, I still want to call him.

MR. VERGA: And, you know, let's find out what it can and cannot do and let's look in the toolbox and see what other tools, communication, imagery, all sorts of things that the military is willing to transfer under the technology transfer act.

CHAIR CAMPBELL: Okay. Any questions? Alright, Ted, you wanted to say some things?

MR. GAINES: No, I'm through talking.

CHAIR CAMPBELL: I'm sorry **(UNINTELLIGIBLE)**

MR. STRICKLAND: Tom Strickland, I'm a fuse engineer from China Lake. I'm really here just to support Mr. Gaines and help answer any questions.

CHAIR CAMPBELL: Okay. Thank you very much. Supervisor Mikels.

SUPERVISOR MIKELS: Yes. One quick question. I brought this up, I think it was in Ventura –

CHAIR CAMPBELL: Would you move closer to the mike, please, Judy?

SUPERVISOR MIKELS: I'm losing track of which meeting, but I did bring up the training issue and why weren't we using military. Why would we have to pay for that if they're getting training out of it?

MR. VERGA: Why? Well, let's look at it this way.

SUPERVISOR MIKELS: Almost rhetorical. No, I mean, you might pay a Christmas bonus.

MR. VERGA: If we're pulling a resource that's already been budget and their supposed to be training or doing deployment or whatever else, that money's been spent. Now they come and do our job, they need to be compensated.

SUPERVISOR MIKELS: No, that was not the question that I asked prior, though. The question was why can't you, for the most part, coordinate training, stateside training doesn't happen under wartime conditions. They schedule those training missions.

MR. VERGA: That's correct.

SUPERVISOR MIKELS: So why can't those be dual missions instead of separate missions?

MR. VERGA: Well, DOD funds are allocated for a certain budget, okay?

SUPERVISOR MIKELS: Um hmm.

MR. VERGA: Congress and the GAO are going to have a fit over that.

SUPERVISOR MIKELS: Well why can't we talk about changing that?

MR. GAINES: That's what NIFTT is to address, the programming.

SUPERVISOR MIKELS: Everybody keeps spitting up these answers as to why it can't be done. What I want to know is, you know, how do we make it happen. I understand current law.

(UNIDENTIFIED MALE SPEAKER): (UNINTELLIGIBLE) answer that.

CHAIR CAMPBELL: Let me help answer it, Judy, that's why we have Congressman Lewis and Senator Feinstein on this committee.

SUPERVISOR MIKELS: Exactly.

CHAIR CAMPBELL: And the Assistant Secretary of Defense, Mr. Verga. Those are some of the issues we want to look at, by the way, and that's exactly why they're sitting on this committee, so the word gets back. Alright, any other questions? If not, thank you very much for your presentation here today. It's

been most enlightening. Next we have Kevin Ohmakera of the, CDF battalion chief, Omara, excuse me, of the California Professional Firefighters representatives. Chief, welcome.

CHIEF OMARA: Good afternoon. I said this morning, but it is getting late in the afternoon. My name's Kevin Omara, representing the California Professional Firefighters. I'm a battalion chief with CDF. I've got about 31 years of experience. I had the pleasure of coming down from northern California to assist you on Grand Prix and the Ole fires, and several other fires over the past 5, 10, 15 years. With me today I have Captain Mark Hartwig with the San Bernardino firefighters and Captain Dave Lopez with the L.A. County Firefighters. We're going to go back and talk about communications. We're going to talk about it from a firefighter's perspective I'll go ahead and turn it over to Capt. Hartwig, and he's going to go through some of the tools that the firefighters carry to try to accomplish the communication issues from our eyes.

CAPT. HARTWIG: Thanks, Chief.

CHAIR CAMPBELL: How many radios do you have? [Laughter.]

CAPT. HARTWIG: I'm going to try to stand up, I think it will be a better demonstration here. That was kind of one of the points to it. My name's Mark Hartwig. Appreciate the opportunity to be able to address the commission. I'm with the San Bernardino County Professional Firefighters.

I want to tell you just a little bit about what we actually did, and I'm a firefighter, fire captain, that was captain of an engine company for 12 days, 6 days on the Grand Prix Fire, and 6 days on the Old Fire up in Lake Arrowhead. And I wanted to first just let you know kind of what we carry, and then share a little bit with you what some of the challenges were that we faced. First of all, I have two radios here, another radio in my **BRUSH** pocket, and then I have two batteries so if we're out on the line, which we often were during the fires, occasionally the battery went out.

CHAIR CAMPBELL: Do you have a radio on your ankle? Oh, that's **(UNINTELLIGIBLE)**. [Laughter.]

CAPT. HARTWIG: I have those three, and then I have a 900 pager that can text. I can't call back on it. And then one of the most important, is most firefighters have this, their cell phone, and that keeps me in communication with both the fire incident and then the real leader back at home, so. If they're lucky enough. [Laughter.] Just want to real quickly, um, 1-800 radio -- County of San Bernardino is on the 800 system. 1-800 radio is used to talk within your strike team. That's very important, I need to be able to my

leader as he gives me direction for my engine company. Engine company captain is part of a strike team, most of the resources that were dispatched for these fires were part of a strike team, that's five engines with a leader, and so it's important that I talk to that leader. This radio was dedicated to talking to that leader, so that leader could communicate with me, and I could further direct the firefighters on my engine company. This radio here is a tactical channel within my engine company. Best case scenario – and I say best case scenario, cause any firefighter that saw me with three radios wanted to kill me probably and take them no many people had the opportunity to get three, but anybody's that's been out on a campaign fire realizes that the more communications you have and capabilities you have, the better you're going to be in the long run. So this is to talk within my engine company, the three other people on the engine company, and then the other radio, which is the high band – you've heard talk about the VHF, that would be the inoperability channel that I was fortunate enough to have in this fire, and that would allow me to talk to people that weren't on the 800 system. And also monitor communications that were within our branch that might be doing other assignments other than what I was doing on my engine company assigned to my strike team. My pager came in handy because there were times that they couldn't get a hold of me on my radio for whatever reason, and then I could get, dispatch could actually give me a message. I couldn't really get back to them unless my phone worked at the time, but that was helpful. And then my cell phone, what it really came down to in a lot of cases, when you couldn't get a hold of your supervisor's strike team leader and even your engine company, you resorted to the old cell phone technology, and that of course served us well. Of course that occasional call that said, "Daddy, I love you, when you are coming home?" Or "It looks like our house is threatened, honey. What do I do now?" That certainly came in handy at that point, too. I started in, uh, my engine company started, as part of my strike team, started in Fontana and then we chased the fire, or I guess you could say the fire chased us, all the way in to L.A. County and ended up at **(UNINTELLIGIBLE)** Park before we were reassigned to the Old Fire in Lake Arrowhead. Specifically some of the biggest issues we had was, as an engine company captain, I want an incident action plan that actually has part of that the communications plan. Typically I try to tuck that somewhere in here, and then the biggest challenge of course for me as the engine company captain, is I am the lookout for my engine company and its crew. I am in charge of communications, escape routes and safety zones. And of course I'm also one of the fire fighters on the engine company, so I think immediately you see the problem with

me monitoring three radios, communicating on those three radios, and then actually also being an active, or an efficient part of that engine company. That was one of the biggest things we faces. And then of course moving from L.A. County up to Lake Arrowhead, the ability to get a hold of an IAP in the communications plan was almost impossible, so a lot of that was word of mouth, checking different frequencies, getting busy signals at times, and other times actually asking on the radio where I could find who I was looking for. So, that's all I have, Chief.

CHIEF OMARA: Okay, now I'm going to give it over to Captain Dave Lopez with L.A. County firefighters for some examples of his experience.

CAPT. LOPEZ: Members of the commission, thank you for the opportunity of allowing me to speak to day. Mr. Hartwig kind of stole some of thunder so I don't want to be redundant, but some of the things we experienced were the same problems other agencies had. We too had to improvise, using cell phones, change batteries, got to different rigs so we could charge our batteries, we just didn't have enough cache of batteries to go around. We did improvise like the firefighters do, and I'd just like to make a statement to the commission that, please listen to what these firefighters say. We are the ones that go out there and put the fires out, we are the ones that risk our lives out there. All I can is that, without proper communications, I'm surprised we didn't lose more bodies than what we did, and I ask that the commission look into the communication problems because there's nothing more frustrating to a company officer that, when you engage in a fire, you have communication problems. Thank you very much.

CHIEF OMARA: Okay, I'll go ahead and summarize a little bit and expand a little bit more. FIRESCOPE a number of years ago did an excellent job with coming up with these standard loads for the radios. Problem is, is over the course of the last 30 years, and that's how long it's been, radio systems have changed, people have changed frequencies. Unfortunately in the fire service, even though we share a lot of information, often times those changes in frequencies aren't shared. And even if they are shared, the cost of reprogramming the radios is insurmountable. I've been told that to reprogram all of the radios at CDF, which they're supposedly going to be doing again here in the near future, to the tune of a quarter of a million dollars. So it's not a cheap adventure to add one frequency when someone adds it from what was the norm yesterday. Some of the things I experienced in Southern California is coming in the fires where they've changed their command net and coming as a strike team later, even though I had the standard load

that CDF had, I didn't have that frequency. We ended up having to reprogram six radios on the strike team because none of us had that frequency. That takes time, it accounts for a lot of confusion, the possibility of inaccurately entering that frequency because it's all done manually in the heat of the battle, is not good, it creates problems. You can go to the portable radios because that's what you can reprogram. Historically we do not reprogram our base radios. The difference there is you have 5 watts of power versus 40 watts. You can't hit the repeater, you can't talk over the hill, because the output on those radios is not adequate. So unless you've got those frequencies preloaded in your base radios, particularly as a branch director and an operations level person, I can't communicate with the people and see the total picture that I need to see. I don't believe that CDF has enough command frequencies and tactical frequencies. There are still units in CDF, not in southern California, that do not have predesignated command nets because of w here we geographically sit in California with the existing frequencies that CDF has, any frequency they've tried to give us impacts someone else. So they can't give us one. We can use the standard one the state uses, but that one's used as a secondary one by everybody, so we don't have one that we can call our own that we can use on a day-to-day basis.

One of the other problems he indicated is, if you can't talk on the radios because you can't hit a repeater, you can't communicate, you go to the cell phone. I have a problem with cell phones. Part of our job, one of the biggest things as a leader of an engine crew or whatever, is to hear what's going on. If people are sharing information on cell phones, I don't hear. I can't change my tactics, I can't adapt things as to what may be happening a quarter mile away because if it's being exchanged over cell phones, I don't hear it and I can't evaluate and see the total picture of what's going on. Granted, they're good, but the same limitations come with cell phones that come with radios. If you can't hit one of their repeaters, they don't work. You will hear everybody say it, I gotta go to the telephone booth. Yeah, we have telephone booths out there because we'll go and find the place on the fire that we can hit a cell phone site when we have to, but that takes you away from the mission you should be doing because you have to drive somewhere in order to get the only communication you have. They're a viable option, but they're not, in my opinion, that good of an option. Most of this has been talked about. Like I say, tactical nets is another issue. All of the tactical nets that CDF has today are derived from using different legs of our local nets, or command nets. So in the area that I'm in, I can only use two because everything else we try to use interferes a net that

somebody dispatches with on a local basis in the neighboring units. So I can't use any of the other 12 that CDF has on a fire in my area. **(UNINTELLIGIBLE)** are using the same ones, so if they have fires, everybody's trying to talk on the same tactical net, and you end up with Division A on the Gulch Fire giving out information that's affecting Division A on the Leonard Fire. It just – there's not enough frequencies. CDF is kind of in their own unique band, they're in the forestry – I believe it's called the Forestry and Conservation Band. There's issues of whether or not we' re considered a priority when it comes to allocation of those frequencies because some people don't envision forestry as a public safety agency because of the title. I won't go back to Dallas's thing earlier that said the Department of Forestry was a part of that commission, I hope it was the Department of Forestry and Fire Protection, cause we haven't been the Department of Forestry in a long time. But, I won't pick on Dallas for that. In a nutshell there's a lot of new frequencies that are coming out there with this narrow banding. We need to make sure, I would ask this commission to make that one of the recommendations, that we maintain the frequencies we have plus we pick up the additional ones as we go forward in this change in the radio schemes. Those frequencies, as I can tell based on all the conversations I've heard today, are probably the frequency range we need to be in, because as I said earlier, if you go to the 800 megs or the further up the scale you go, the more restrictions, the less effective they are because they're affected by vegetation, canyons, trees, they don't go as far. We have a hard enough time today communicating without having to limit the ability of our radios in the future because of the wattage and so on.

There were lots of communication problems on a day-to-day basis on all the fires. Can you identify to a specific radio, a specific item? One, people didn't have the radios because they don't come with the standard modes. Yes, the can bring in the supplies of them, but still not everybody has radios. When that happens, people go off, like Mark said, and do their own thing, use their own frequencies. It works, but the communication breaks down because people can't hear what other people are talking about. So we do lose communication just to make the system work. Every firefighter needs to be able to talk on the radio. CDF standard equipment load right now is two **(UNINTELLIGIBLE)** per engine. It works okay today, cause we only have two firefighters on the engine with the captain. But, as you've heard last week, we're asking for a fourth one. So, we need more radios to go with our people, and everybody needs to have one so that they can communicate and when you need to get a hold of them and get them out of a

situation, you need to be able to get a hold of them. If they're 2,000' up on a **(UNINTELLIGIBLE)**, I don't care how loud you can yell, they're not going to hear you, particularly over the roar of a fire. You have to be able to communicate. Our firefighters will go up and down that hill for 12 hours carrying hose, they're doing it by themselves. They're walking by themselves. They have to be able to communicate, and right now we can't do that because we don't have adequate radios or adequate frequencies. Every – I won't say every report – but I would speculate that the majority of the reports that have been made after fatalities have all identified a common issue – it's communications. And even that's identified in **(UNINTELLIGIBLE)**. With that, we'll open it up for questions.

CHAIR CAMPBELL: Thank you, Chief, and thank you for your comments on firefighter safety, they're well taken, particularly in regards to communication breakdowns. Uh, Mr. Wolf?

MR. WOLF: Thank you very much. We were talking – these are my guys – and we were talking and trying to figure out an example and I noticed they didn't cover it so I thought I'd remind them of it. We were talking at lunch, we talked to a lot of our firefighters before we came here, so we gave you the accurate information from what they're saying.

CHAIR CAMPBELL: Also, **(UNINTELLIGIBLE),** too, Bob.

MR. WOLF: Yes, they did. [Laughter.] Thank you. Uh, I can tell you that one story that was related to us is that John Hanley, who was at a previous meeting, you might remember him, they were on a fire at the Cedar Fire and they could not communicate with anyone else other than San Francisco firefighters because the radio system just didn't interface. So they were on a long dirt road with a lot of houses on it and the fire was coming at them, and they had to devise a system that when they blast the air horn four times, that means everybody run for your life. Because they didn't have a radio system, that's how desperate it is. We heard a lot of stuff about that. My question to you, I guess to the three of you to kind of clarify is, I don't understand if every here understands what a command net is, and what a tactical net is. Command net, would you explain that? And explain tactical briefly, and that's my question.

CHIEF OMARA: Okay, essentially the command net is where your incident commander and your operations leaders, be it a branch director -- basically you have the incident commander under the ICS and you have the operations section chief, that if you break it to the next level, you have a branch director, then you go to a division group supervisor, then you go to the tactical unit, the engine's **(UNINTELLIGIBLE)**

leader, etc. The command net is basically the frequency that's shared by the ICD ops down to about the division **(UNINTELLIGIBLE)** level. That's where they talk about the big picture and what's going on with the fire, the resources they gave, that's where all that communication goes on, it's in the hierarchy of the incident. The tactical nets are assigned to a specific area or function. In other words a division, or a group such as a structure protection group, that's the net that, the bottom end user, the people that are actually putting the wet stuff on the red stuff, that's the net that they're supposed to talk on. But everybody has to be able to hear those nets, both commands, so that they can keep in mind the big picture, like I said before. So, did that explain good enough, Bob?

MR. WOLF: Yes, **(UNINTELLIGIBLE)**.

CHAIR CAMPBELL: Thank you very much. Oh, Senator **(UNINTELLIGIBLE)**.

SENATOR LASUER: Going back to the beginning of this commission hearing, is there a voice on the AB 20 AB 1 commission or on the interoperability executive committee, the two different bodies that we talked about earlier about interoperability. Is there a voice for the line firefighters either through the Professional Firefighters Association, or some other, on those two bodies? The reason I ask is because if all the brass decide that this is the plan and it ends up not working at the line firefighting level, we haven't accomplished much.

CAPT. LOPEZ: I guess I probably – if you don't mind, I'll answer the question. I'm not a – I know that there's separate communities going on and through OES we have received permission to sit on some committees, but I doubt that we're part of that major committee. That's probably more along the line of major fire chiefs and the directors of agencies and such nature, but I believe that we should have a seat because we're the ones that have to live with whatever they come up with. And it would make a lot of sense that we would be in there and do that, so I'm not aware any.

MR. WOLF: So at this time, you'd say there's not on anyone of those bodies?

CAPT. LOPEZ: I'm not aware of any.

(UNIDENTIFIED MALE SPEAKER): [**Speaker's mike is not on, cannot make out everything he's saying.] . . .** When the legislature created 2018, although they put 12 state agencies . . . coordinate with another dozen professional . . . firefighters, fire chiefs, sheriffs, and those types of associations, so there is a consultative role . . . professional organization on the public . . . has used those

similar organizations as nominating bodies, and so we've added California fire chiefs . . . I don't know . . . California professional firefighters are one of the groups that we have reached out to . . . to sit on either the committee or subcommittee. But it's the intention . . . to ensure that . . .

CHIEF OMARA: It would seem to me that if that hasn't happened it would certainly be necessary to happen.

CHAIR CAMPBELL: That's an excellent question, and I think worthy of an endorsement, Bob.

MR. WOLF: Yes, thank you very much. And obviously we could use any help we can get, and if we were allowed to participate we would make sure who that representative would be, would be somebody that was pretty knowledge in radios.

(UNIDENTIFIED MALE SPEAKER): (UNINTELLIGIBLE).

CHAIR CAMPBELL: Okay. Thank you. Any other questions? Gentlemen, thank you very much. We appreciate you being here today. We appreciate you coming decked out with all your radios. [Laughter.] Our next presenters are Kim Zagaris, the Chief, and Robert Prater, the Deputy Chief of FIRESCOPE. Gentlemen? Thank you.

CHIEF ZAGARIS: Thank you, Senator Campbell, and commission. The good news is that Chief Tisdale did such a great job, we're going to be able to speed up our presentation and get moving forward. We've already somewhat covered FIRESCOPE and what it stands for. We've already heard a little bit about the history. FIRESCOPE started in the early '70's due to destructive fires. A couple years later, Congress funded some dollars for us, almost $1 million, local and state agencies put in **(UNINTELLIGIBLE)** services and that got us going to develop **(UNINTELLIGIBLE)** as we've identified.

Next slide. In 1981, the establishment of the National Interagency Incident Management System based upon FIRESCOPE, which was adopted by the National Wildfire Coordinating group which consisted of the **(UNINTELLIGIBLE)** in a command system, a training component, qualifications and certification system. Also the publication and management side of that. And last but not least, the supporting technologies. Next slide. Following that, we had in 1989 legislation, oh, sponsored by you, Senator Campbell. Uh, Senate Bill 27, that actually provided program direction for OES, CDF and the State Fire Marshall's office, now made FIRESCOPE a statewide program for those agencies.

In 1991 – next slide – we had Senator **PETRIS** establish Senate Bill 1841, SIMS, which is actually based upon the incident command system, MACS, the operational area concept, and our state's mutual aid system. Next slide.

In brief, the past was a – FIRESCOPE was established in southern California, and then it became in 1986 to it's present state, an all risk program for the entire state of California to manage not only wild land but all risk incidents, and today it actually is being utilized for what we call NIMS, the one-eyed NIMS, on a national basis. Next slide.

On February 28, 2003, Presidential Directive 5 is actually working toward the establishment of a single national incident management system. A lot of what that is based upon is really came out of FIRESCOPE, as well as what the National Wildfire **(UNINTELLIGIBLE)** group worked on with the two-eyed NIIMS. Next slide.

We've already heard that incident command is designed to strengthen the demand and control of major incidents. These are the major components. Not only **(UNINTELLIGIBLE)** command and control at the local state and federal level, but at least in California it compliments our state fire and rescue mutual aid system, as well. Next slide.

We've talked about it's **(UNINTELLIGIBLE)** organization and functions, what these functions are under the incident command system and how well it works in unified command, if it's operated and used correctly. Next slide.

One of the components we're really going to get into and how we used it during the course of the fire siege is actually multi-agency coordination system, MACS, designed to improve the control allocation of inter-agency coordination in situations of all the multiple incidents. And this is an actual shot taken during the fire siege at the Riverside Operation Coordination Center, in Riverside, and the number of agencies were in the room statusing resources. The function of MACS – maintain coordination situation resource status, disseminates information to cooperating an effective agencies, establishes priorities based upon incident values at risk. Those are life-threatening situations, threat to real property, high damage potential, the complexity of those incidents, and allocates those critical resources when we get to that vital point.

Now I'm going to real quickly cover how we use MACS and we have four modes of operation. Today is an example of a Mode 1 day, in which we operate – no special action is really necessary, we have day-to-day minor activity. Generally during fire season we go to Mode 2, reflects normal fire season operations, or while isolated major incidents may occur, there is no significant impact on regional or statewide resources. We can also go to Mode 2 in anticipation such as maybe a rain event or some other activity as we did this last week with potential rains here in the area. Mode 3, makes required notification within agencies and adjacent agencies that are part of the operational area. Provides resource statuses, assign available resources that will be available within one hour via the MACS 405 form, and prepare for conference calls. We strictly do a lot of conference calls at this point in Mode 3. Also during Mode 3, we're usually dealing with the potential of using out of region resources, talking about the OES mutual aid regions. When we go to Mode 4, above actions as appropriate, and we send an agency representative to the MACS operation coordination center. When we go to Mode 4 it's generally because the region and statewide are reaching close to draw down for resources and we're generally at a point when we're starting to look at out of state resources. Next slide. Next one after that, I'm sorry.

In your handout these will actually more clearly delineate what Modes 1 and 2 are. Next slide is Mode 3. Next one is Mode 4. Next slide. Also at the same time, I'll also tell you that we're usually engaged in conference calls, both CDF is engaged with those with their units up and down the state, the federal agencies are engaging with their different forests, OES is conference calling with the regions, and local agencies at the operational **(UNINTELLIGIBLE)** may also be engaged in MACS conference calls at that time. At this point, I'll turn it over to Bob Prater who, in conjunction with our counterparts, the Operation Coordination Center, the Department of Interior and U.S. Forest Service and the California Department of Forestry and Fire Protection, they manage together the MACS coordination function and Bob has spent a lot of time there facilitating that with our counterparts. CHIEF PRAYTOR.

CHIEF PRAYTOR: Thanks, Chief. I'm going to try and be brief and walk you through 13 days of MACS operation – 13 or 14 days. Many of you on the commission before me today were intimately, or should I say painfully, involved in this process. It was time consuming and we spent a lot of time talking.

It started on Tuesday, the 21st. The MACS process was initiated when the first fire was reported in Roblar on Camp Pendleton. We started phone conversations with the incident commanders. We gathered

intelligence through our people at South Ops, our intelligence group, and they collected the resource availability was satisfactory and so for that point we must monitored the activity for the rest of the night, although a lot of activity was taking place.

Wednesday morning the 22nd, we actually initiated the MACS conference call with all the FIRESCOPE partners, our northern operation people in Redding, OES headquarters, CDF headquarters, the interagency fire weather unit in Riverside, and the incident IC's, and I believe there were probably a few others that I missed in that. We received updates from the incident commanders, looked at the incident 209 forms, which is an intelligence form, identified the values at risk and the critical resource needs for each one of those incidents. We established priorities of the three fires that were going at the time, and then at the same time when the weather people predicted the winds were coming later in the week, starting preparing for the wind event. The resource availability remained adequate, so it was just business as usual.

Thursday, the 23rd, MACS conference calls took place both at 9:00 in the morning and at 4:00 in the afternoon. On each one of those, we received intelligence updates, weather updates, and prior to the conference call, the core group, the OCC in Riverside, got together and set priorities for the incidents based upon the intelligence that was received, and then we shared it with our FIRESCOPE partners and other cooperators throughout the state. The preparation for the wind event continued, and key agencies such as CDF and the Forest Service, began the mobilization south to prepare and staff up for it. On Friday, we had a 9:00 conference call, and once again we received our intelligence, normal procedure, established priorities for the incidents by getting consensus among all the people on the call, resources assigned from the past fire to the Grand Prix when it took off. The Pass Fire, which was the one in **(UNINTELLIGIBLE)** Valley was starting to look pretty good. Riverside County was picking it up, so all the available resources were then reassigned from the Pass to the Grand Prix. 1600, or 4:00 that day, we activated Mode 3, although I must say, all the actions that you saw taking place or heard taking place starting on Wednesday is typically a Mode 3 operation. So we were doing most of the things we were doing in Mode 3 from day two. Significant mobilization took place to the Grand Prix cause that was the afternoon that the fire made its run down into Rancho Cucamonga.

Saturday morning. This is a great day. We had our 9:00 conference call. Our call was interrupted to tell us that we had a new start in Waterman Canyon. Once again we gathered the intelligence on the

fires that we had going at the time, nothing on the Old Fire at that time, they were still waiting for what they had from the initial attack. We established the priorities for the five fires that were before us, and I think the Old Fire became #1 at that point. We escalated the ordering and allocation of resources and established MACS Mode 4.

On the 25th, or, excuse me, this is the 25th – that same day throughout the day, numerous conference calls besides just the MACS calls took place. It's kind of hard to recap all that takes place, but like the chief was saying, we end up talking with virtually everybody in the state, outside the state, trying to inventory the available resources that we could bring to task. We continuously received Intel updates from our Intel group at the South Ops, the California National Guard Aircraft were requested and available for resources from the Verdale fire were reassigned to the Grand Prix. Available resources from the Roblar 2 were assigned to the Cedar Fire when it took off at 5:30, within an hour we had resources that were pulled from Roblar 2, which was starting to be picked up and sent to the Cedar Fire.

Okay, Sunday, next slide. Once again we have the conference calls –

CHAIR CAMPBELL: Excuse me, uh, question from Assemblywoman Kehoe.

ASSEMBLYPERSON KEHOE: The resources that were pulled from the Pendleton Fire over to the Cedar Fire you said was within an hour of the 5:30 start?

CHIEF PRAYTOR: That's correct.

ASSEMBLYPERSON KEHOE: What kind of equipment was it?

CHIEF PRAYTOR: I believe they were Hot Shot crews or hand crews.

ASSEMBLYPERSON KEHOE: On fire trucks?

CHIEF PRAYTOR: No, they were, hand crews they worked on crew buggies that were reassigned to the Cedar Fire. We have the IC for the Roblar 2 Fire here with us, and he can clarify that. Ralph?

MR. SMITH: Ralph Smith, **(UNINTELLIGIBLE)** on the Roblar 2. We received the report that Cedar Fire started right before our briefing at 6:00 that evening, on Saturday. After the briefing at 6:30, I got together with the operations folks we had on the fire, and we identified two of our hotshot crews, I believe it was **(UNINTELLIGIBLE)** immediately sent down to the Cedar Fire. I don't know what the report location was, they were reassigned to Monte Vista ECC. I believe at that time **(UNINTELLIGIBLE)**.

ASSEMBLYPERSON KEHOE: Were you using aircraft up in Roblar 2?

MR. SMITH: Uh, **(UNINTELLIGIBLE)**.

ASSEMBLYPERSON KEHOE: Did you send anything south on Saturday to Cedar?

MR. SMITH: Uh, on Saturday, I don't we flew up there. WE flew some helicopters on Saturday. As far as fixed wing aircraft, I don't think we **(UNINTELLIGIBLE)** any aircraft – we were picking, by Saturday, our fire was looking really good. It was I think about 6500 acres at that time.

ASSEMBLYPERSON KEHOE: Looking real good, like real big, or you were getting it under control?

MR. SMITH: Like we were getting it under control.

ASSEMBLYPERSON KEHOE: Okay.

CHIEF PRAYTOR: I actually stand corrected. The two crews were sent on Saturday evening. Sunday morning five strike teams of engines were sent from the Roblar 2, which equates to 25 engines, as well as numerous overhead positions.

ASSEMBLYPERSON KEHOE: And your numerous overhead positions, is that aircraft?

CHIEF PRAYTOR: Uh, like division supervisors –

ASSEMBLYPERSON KEHOE: Oh, oh – you mean the personnel.

CHIEF PRAYTOR: Individual representatives for different specific positions.

ASSEMBLYPERSON KEHOE: Alright. Thank you.

CHAIR CAMPBELL: Thank you.

UNIDENTIFIED FEMALE SPEAKER: Senator, **(UNINTELLIGIBLE)** Could you elaborate on the crews that were, uh, the extra personnel that were brought in, on press reports have suggested that Saturday, after the fire started at 5:30, by 6:00, 6:30 there were something like 300 to 400 fire personnel in the area of the fire. Who were they? Where did they come from?

CHIEF PRAYTOR: I'm not sure I can address that. We might be able to ask -- someone in the audience would have that information.

UNIDENTIFIED MALE SPEAKER: I, I, I think –

CHAIR CAMPBELL: Yes, sir?

MR. GARDNER: I was dispatcher, I can certainly **(UNINTELLIGIBLE)** for you. I'm Tom Gardner, the **(UNINTELLIGIBLE)** who was on duty when they **(UNINTELLIGIBLE)**. We sent 10 hand crews, which is 17 people on each hand crew, 8 were CDF, two were the Forest Service hot shots, 10 engines were CDF, at least 5 were the Forest Service, several water tenders, plus the San Diego **(UNINTELLIGIBLE)** Fire Division **(UNINTELLIGIBLE)** volunteer department came, so that was the group of **(UNINTELLIGIBLE)** that went out that first hour, and they told us **(UNINTELLIGIBLE)**. The aircraft that were on the ground assigned to Roblar we took that at that moment and reassigned to Cedar, but they could not get off, they were sitting on the ground **(UNINTELLIGIBLE)**.

UNIDENTIFIED FEMALE SPEAKER: Would you mind helping us just follow from there. This fire took off, it went through **(UNINTELLIGIBLE)** Country Estates, which was very well protected, very few homes burned there, and then it went off down through Wild Cat Canyon. Who was in charge of the fire – it was originally in the U.S. Forest Service, then it was out in CDF territory. Who stayed in charge and organized all of that and called for additional resources during the night?

MR. GARDNER: **(UNINTELLIGIBLE)** the initial attack was in **(UNINTELLIGIBLE)** order so they were the **(UNINTELLIGIBLE)**, CDF division chief was assigned as a liaison and assigned with the incident commander. Once the fire became a threat to the safety, he **(UNINTELLIGIBLE)** It automatically **(UNINTELLIGIBLE)** Also a person from the San Diego **(UNINTELLIGIBLE)** fire chief, chief 701 was out there too. So there was actually three of them that burned through several jurisdictions. Once it came toward Lakeside, the Lakeside division chief was up here and he became part of the equation.

UNIDENTIFIED FEMALE SPEAKER: Why did he need to drive from Lakeside to Ramona? You can't do that by, you know, a TV conference call?

MR. GARDNER: Face to face communications direct, so that there's no questioning about what's going on.

UNIDENTIFIED FEMALE SPEAKER: And you don't have teleconferencing.

MR. GARDNER: Well, you'd all look at the same map. This is the initial **(UNINTELLIGIBLE)** the first 12 hours, so they're all looking at **(UNINTELLIGIBLE)** map, and they're goin' this is what we're going to do, you need to do that face-to-face, direct communication to be clear and concise.

UNIDENTIFIED FEMALE SPEAKER: Thank you.

CHAIR CAMPBELL: It also involves the safety of the firefighters.

MR. GARDNER: Yes.

CHIEF PRAYTOR: As we work through this, the MAC **(UNINTELLIGIBLE)** is not the incident command system itself working that incident. The MACS system is really providing the additional resources that the IC's, unified command is requesting on these incidents out there. To give you another example, morning of the 26th, the first request for the outside resources through the State Fire and Rescue Mutual Aid System started at 0400 hours. As Chief Tisdale indicated, he is the operational area fire and rescue coordinator elected by the chiefs here in Riverside, while in San Diego the elected operational fire and rescue coordinator is Chuck Maynard, currently. And in Monte Vista dispatch center, which Tom also works over there, also serves in that function. At 0400 hours, the first request for mutual aid went outside the County of San Diego. In fact, the first resource was provided by Orange County, 0400 hours, coming in there. From there resources were additionally moved from other incidents, such as the Simi and Verdale Fire, as well as the Grand Prix Fire and reassigned down in there. During the first 11 to 12 hours, we're talking in the neighborhood of about 30 – 35 additional strike teams that were moved not only from southern California, but also from northern California, as folks were freeing up the additional resources. Once again, a very fast moving fire takes time to mobile those assets and get them down there in that situation. I'll let Bob pick up again on what else occurred that morning of the 26th.

CHIEF PRAYTOR: If I could just clarify that the MACS, the Multi-Agency Coordination System, we don't manage the fire. We just manage prioritizing the fires, or the incidents because it's an all-risk system, and allocating the critical resources so that they go where they need to go. Hopefully.

CHAIR CAMPBELL: Can we get to Monday?

CHIEF PRAYTOR: Pardon?

CHAIR CAMPBELL: Can we get to Monday, the 27th?

CHIEF PRAYTOR: Monday, the 27th. We convene the MACS trip – I need to back up just to the 26th and make a note that some of the agencies, we stuck with the conference calls up until Monday because some of the agencies had their own incidents going, it was difficult for them to release chief officers and key personnel to come to the facility to work with us. We finally managed to make that

happen, and on the 27th, the MACS group convenes at the Operations Coordination Center in Riverside. Prioritization and resource allocations, meetings were taking place twice a day, followed by a briefing conference call statewide on which we had numerous agencies and you'll see that at the bottom of this slide. This was the routine for the next six days, and I'm not going to go through every day because it was, it's the same routine every day. At the peak of the activity we were dealing with 14 separate incidents and prioritizing them. That had it's own unique difficulties. We had some change in some management style combining fires and then bring in overhead management teams, or, uh, **(UNINTELLIGIBLE)** command teams, excuse me. So we had to adjust the way we had normally done business. The system is very flexible. A good group. They worked well together and were able to overcome some of the confusion we had and get the incidents prioritized. As I said, we had a lot of people represented. We had the Director of OES, the Director of CDF, the Region 5 Forester, the Chief of Fire and Aviation Management, who is sitting with us here today, the Region 5 Director of Fire and Aviation Management, FEMA Region 9, the U.S. Fire Administration, the Department of Interior, L.A. County, Orange County, San Diego County, Ventura County, Riverside County, San Bernardino County, the Northern Operations Center in Redding, the Interagency Fire Weather Unit, OES headquarters, CDF headquarters, the National Interagency Coordination Center in Boise, and the OES Region Coordinators and the affected OES Operational Area Coordinators. I don't think we could have gotten anybody else into the loop to coordinate what was going on and be sure that the word was spread and to get input and pull in as many resources as we possibly could.

CHIEF PRAYTOR: At one point we had to increase the 30-port line that was there and go to a more secure process. We went to 60 lines to bring on the additional folks from not only in-state but out of state and around the country that wanted an input into what was going on.

CHIEF PRAYTOR: That actually had some drawbacks. I mean, it helped in some incidents, in others it made it a little overwhelming, and one of the things you'll see **(UNINTELLIGIBLE)** –

CHAIR CAMPBELL: When strike teams come in from outside the state, we have a communication problem?

CHIEF PRAYTOR: Actually they function quite well. The white fire nets that we do use are interstate used all across the country and then most of those resources when they arrive at the incident they

are able to get the cache radios and communicate very well. I am not aware of any significant problems for the unconditional out-of-state resources that were brought in from Arizona and Nevada.

UNIDENTIFIED MALE SPEAKER: Mr. Chairman, may I ask a question here? Back when we had our meeting in San Diego, there was a document provided by the U.S. Forest Service. In the document, it's a slide, it says fuels, long term drought exacerbated, high fire potential, widespread brush and timber, widespread critically dry, live fuels and fuel fire behavior, record low dead fuel moistures. There was a map showing fuels much of the area surrounded the Cedar Fire not burned since 1970. Verdale Fire reported spotting for a half mile to a mile, and it goes on to talk about other fire situations. My concern and my question relates to the fact that the knowledge about the fuel condition certainly preceded the fire, and you indicated that there was monitoring on Sunday, October 26, that would be from a MACS perspective? From your office, though, what preceded the monitoring with regard to the known fire conditions throughout the state and with that knowledge, were any resources mobilized and positioned in the state that should have been activated or could that be a process that should now be employed as we look back playing 20/20.

CHIEF PRAYTOR: The answer to that question is yes. The agencies, the resource agencies, the Forest Service, BLM, CDF, all had pre-positioned resources and had moved what they had. And there was also another situation that they could probably address better, but they were still in fire conditions in northern California. So there was a delicate balance to be sure they still had coverage in northern California and not move everything to southern California.

UNIDENTIFIED MALE SPEAKER: Okay, my last question is, was there – I never have a last question. This question is quick. Was there any decrease in capability of the resources that you had during the weekend simply because you couldn't reach anybody, or they were unprepared?

CHAIR CAMPBELL: A yes or no will suffice.

UNIDENTIFIED MALE SPEAKER: Yes, or difficulty.

CHAIR CAMPBELL: Thank you. Senator Hollingsworth.

SENATOR HOLLINGSWORTH: I'm looking a the overhead right now, and you have that the MAFFS assigned to operate from Channel Islands were, you're saying routine allocation decisions. You're

saying that those were employed by the Piru Fire, I understand. At what time, what date and when were they **(UNINTELLIGIBLE)**.

CHIEF PRAYTOR: I couldn't tell you the specifics of where they were deployed, that's a tactical operation by the incident.

SENATOR HOLLINGSWORTH: Just the date.

CHIEF PRAYTOR: The MAFF units were ordered on the evening of the 25th, which was Saturday. The first two MAFF units were requested by the Department of Forestry to OES, and **(UNINTELLIGIBLE)** California guard to provide that mission. Those aircraft were ready to go on the morning of the 26th, and they were hampered to be able to fly due to the weather.

SENATOR HOLLINGSWORTH: That's the National Guard MAFF units that we have control over at Channel Islands.

CHIEF PRAYTOR: That's correct.

SENATOR HOLLINGSWORTH: The second bullet you have there is military helicopters assigned to Paradise and Cedar. When were those ordered and when were those actually flying over the fire?

CHIEF ZAGARIS: I can't specifically answer the questions on the DOD helicopters that were being handled by the Forest Service and coordinated, but it was a decision that they would be utilized on Paradise on Cedar because of the location close to the DOD facilities for logistical support of those aircraft.

SENATOR HOLLINGSWORTH: Okay, but I have to take issue with this overhead thing, routine allocation decisions, and yet you're putting the bullet point in there of military helicopters as though it was an OES function routinely at the beginning of this **(UNINTELLIGIBLE).**

CHIEF PRAYTOR: No, that isn't – these are all things that were discussed during the MACS operation as they became issues, these were routine decisions that were made by the MACS group.

SENATOR HOLLINGSWORTH: Okay, but it's -- what I'm getting at is it's crucial to say a decision made well into a conflagration is not necessarily something to trumpet as a big success if it was needed and offered earlier.

CHIEF PRAYTOR: I'm not claiming it was a success, necessarily.

SENATOR HOLLINGSWORTH: Okay, well then it wouldn't be routine and say that, you know, this is an allocation decision, standard operation procedure, and yet it was something that was basically OES and everyone was **(UNINTELLIGIBLE)**.

CHIEF ZAGARIS: Also on the evening of the 25th, the eight National Guard helicopters were ordered. Following those eight National Guard helicopters by our own state, and additional order went out to the state of Nevada for three other helicopters, followed by an additional helicopter out of Oregon to go to the Cedar Fire, followed by an additional helicopter out of the Oregon Guard to go to the Whitmore Fire at the north end of the state is an example that things are still going on.

SENATOR HOLLINGSWORTH: I saw those National Guard Black Hawks Monday morning. But, do you see what I'm saying here? You're saying military helicopters and when I ask you when were they ordered, you're saying well it wasn't us, it was Forest Service. I understand you had interagency command, but, you know, the public wanted to know for days into this fire why the military helicopters in San Diego active duty –

CHAIR CAMPBELL: Now distinguish between, I think **(UNINTELLIGIBLE)** between the National Guard and the, uh –

CHIEF ZAGARIS: Why those active duty were not deployed until mid-week, Wednesday, Tuesday night, Wednesday.

CHIEF PRAYTOR: That's correct, and that's something that was being worked on and I don't have all those details, but it was decided that when they were going to deploy those, if they were going to fly, they would operate them out of the DOD installations closest to those fire to best logistically support them.

SENATOR HOLLINGSWORTH: Then you don't have an answer as to when those active duty military helicopters were order and deployed?

CHIEF PRAYTOR: Some of my colleagues here –

CHAIR CAMPBELL: Ray, do you want to answer that please?

MR. QUINTANAR: The agreement we have with the military and active, use of active **(UNINTELLIGIBLE)** helicopters require about 40 hours of training of the equipment so they can understand the hazardous environment that you're going into, compare that the Iraq (**UNINTELLIGIBLE)**

UNIDENTIFIED MALE SPEAKER: I hope not.

MR. QUINTANAR: Also the kind of helicopters they have **(UNINTELLIGIBLE)** beyond the budget **[TAPE 3, SIDE A ENDS; SIDE B BEGINS]** for us requires 15 hours of flying. We equate that to the military to 500 hours. Part of that is because the military moves so much **(UNINTELLIGIBLE)**. . . . it takes a few days, we finally had some of the trained on a Saturday, and by Sunday we had them all ready to go by that time. Right now I think we have through CDF a lot of them being trained, but again you need to understand, as Mr. Verga has stated, these people are going to move. So they don't stay in one place all the time. When this thing was happening, it was not, uh, these people were not available.

SENATOR HOLLINGSWORTH: I didn't ask for a defense. I appreciate your defense of the delay in ordering, I was just asking when they were ordered because I don't want the impression left from the presentation that this was, you know, routine done at the beginning of the conflagration, and so on. We need to know –

UNIDENTIFIED MALE SPEAKER: Take the word from **(INTELLIGIBLE)**. [Laughter.]

SENATOR HOLLINGSWORTH: Yeah, well, that's probably a poor choice in allocation decision. I beg your pardon, we're trying to get to the bottom of things, and if you're going to put something up there and you can't stand the scrutiny of the questions, then don't put it up there.

UNIDENTIFIED MALE SPEAKER: I think we can actually get back to the definitive answer, it just won't be today.

SENTOR HOLLINGSWORTH: Thank you.

CHIEF PRAYTOR: Thank you.

CHAIR CAMPBELL: Alright, thank you very much, gentleman, we appreciate your –

UNIDENTIFIED MALE SPEAKER: Are you chairman?

CHAIR CAMPBELL: I hear a voice.

UNIDENTIFIED MALE SPEAKER: Right over here.

CHAIR CAMPBELL: Yes, sir?

UNIDENTIFIED MALE SPEAKER: Thank you.

CHAIR CAMPBELL: Okay, Jerry.

MR. HAMILTON: One of the factors we haven't talked about here, and I think we're going to introduce some information later on, there's a resource availability issue we're talking about that's roughly

important here, why weren't assets ordered and what are the processes for ordering assets and so forth. The other issue, though, is the effectiveness of assets under extreme burning conditions. We have earlier testimony I believe early in these incidents where 8 air tanker pilots grounded themselves because of debris strikes that they were experiencing at 1500 feet, AGL, including full sheets of plywood flying by them, and again, it's uh, there's an issue about ordering assets, there's another very important issue that can't be overlooked, and that has to do with the effectiveness of assets under extreme conditions. Thank you.

CHIEF PRAYTOR: Okay, we continue to evaluate ourselves in the FIRESCOPE system continuously. Were there things we could have done better? Yes. Will we do better next time? Definitely. Even as we were operating in the max mode, we were picking up on things that we need to do better next time, do differently next time, and so we have some recommendations.

First one is initiate Mode 4 declaration as soon as the criteria is met and immediately send representatives, as painful as that might be, to the OCC. Consider advanced staffing when severe conditions are anticipated. Include affected agencies involved in the MACS Mode 4 process to alleviate misunderstandings and improve planning. We had some departments and agencies that were impacted by fires, that if they had been part of the planning process, probably would have been able to participate, understand better what was going on, and contribute to the decision-making. Come up with a means to streamline the demobilization process for quicker demob and re-assignment of resources from incident to incident. We need to come up with a plan to provide for facilities to handle the increased surge of personnel that show up at the OCC, we're busting at the seams. This facility was built in the 1950's and we've grown significant, and so we would think that it would be good to expedite the move of the OCC to **(UNINTELLIGIBLE March?)** Air Force Base in Moreno Valley. Acquire technology capable of real time situation status and instant activity forecasting. All stuff that you've seen here in presentations in the previous meetings that you've had.

And in closing, we went back to Mode 2 on the 4th of November, when it was **(UNINTELLIGIBLE)** see the totals, the system was stretched, the system bent, but I don't believe it broke.

CHIEF ZAGARIS: You can't do this anywhere else in the country that you have the resources that you have in this state. I think it's important for those elected officials, especially to really realize that if you

went to any of the other 49 states or any where else in the world, you would not have the resources capability or the coordination that we have, but we do recognize we can improve everyone of these times. But we are very fortunate than anywhere else in the country.

CHAIR CAMPBELL: Gentlemen, thank you very much for your testimony. I have been looking at my wrist, observing my timepiece and I am nearing panic as I recognize that my flight leaves at 7:10 out of Ontario Airport, or 1910 for those of you **(UNINTELLIGIBLE)**. Let's see, uh, I'm encouraging speed – not on the highway – but speed here. Let's see, Colonel, it's all yours. Colonel Crocker with the California Military, and he has a little presentation.

COLONEL CROCKER: I do, sir. Mr. Chairman and members of the commission, on behalf of the Adjutant General, General Munro, and my boss, General Dan Gibson, I am here to make a presentation on the Predator. My name is Lt. Col. John Crocker, and I will try to expedite this as much as I can. I was a little --

CHAIR CAMPBELL: Because this is one of my favorites, you can take a little bit more time. [Laughter.]

COLONEL CROCKER: Well, I was distressed to show up without my clipboard after your additional comments, but I will try to hurry through, using the minimum number of acronyms available. Slide, please. The request was to give an overview of how the Predator might be used in essentially fighting wild land fires. I'm going to give you a quick system at a glance overview here. I'll let you read the specifications for yourself, but the Predator is an unmanned aerial vehicle that has really long wings and it doesn't weigh very much. That gets to the core of the point because it can linger over an area for extended periods of time. The part of the system that's most identifiable is of course the unmanned aircraft, which you can see. The – next slide, please – the system is truly a system though. The cockpit, if you will, resides in the ground in a trailer-like facility where a pilot and a sensor operator sit and exploit the information that the Predator provides. It is important for you to recognize that the system is more than just the aircraft because it can download tremendous amounts of information and be exploited on the spot. Slide. Just want to make sure I'm on the right one here. Uh, the Predator, interestingly enough, is made just outside San Diego, manufactured there and is tested in the high desert near Palmdale and Edwards. Slide. The Predator serves a vital function for the Air Force and in fact the U.S. military. It provides

military commanders with long linger time surveillance, reconnaissance and intelligence that, as you have seen over the last few years, has been a very, very important piece of our ability to accurately use our military. It is remotely piloted, I'll mention that again, and it has modular payloads, and that becomes important in this conversation because while I'll go through the sensors that are currently on the Predator, there are a number of sensors that have not been tested that are potentially available to do a great number of things. But we'll go through these sensors that are currently available. Slide, please. The Predator is flown via data link and while that's a slightly complicated slide, I'll just point out that the ground station with the little antennae that's on the right bottom there, can talk directly to an aircraft. Or, the aircraft can be flown via satellite once it's out of line of sight. In other words, once it's over the horizon or a great distance away. In fact, it is a fact that aircraft being flown in Afghanistan and Iraq are flown from the United States **(UNINTELLIGIBLE)**. So you can see --

CHAIR CAMPBELL: That's kind of out of line of sight, isn't it?

COLONEL CROCKER: It is out of sight, yes, sir. [Laughter.] Um, also, you can get connectivity on the ground station, so you can pass on information and this is where I mention again that the information is exploitable. You can pass that directly through ground communications, or I might add back down to individuals on the ground via satellite. Slide.

I'm going to rapidly go through the sensors here, and here's well I attempt to not use too many acronyms. On the aircraft is an electro optical camera, if you will. It has satellite communications; it has a laser designator, and synthetic **(UNINTELLIGIBLE)** radar, as well as an infrared camera. Just as an aside, it has a VHF, UHF and FM radios on board that can be used to communicate. It also has Mode 4 and **(UNINTELLIGIBLE)** – has Mode 4 as in ATC capability, so it can work in national air space if given approval. Slide. Hopefully this will run. There's a video clip here that gives you some idea of the ability of the aircraft to maneuver its pod. One of the other things that you'll see in this brief video clip is its ability to zoom in. It does have a fairly significant zoom capability and near the end of the clip, you'll see it start to search out and eventually narrow way down onto a series of tanks.

CHAIR CAMPBELL: How high is it flying at that point?

COLONEL CROCKER: I apologize. I don't know, but normally it flies between 10,000 and 20,000 feet, somewhere in there. I don't know in this particular slide. Medium altitude is essentially the

answer. You can see that it has the ability to zoom in and give you fairly detailed information, with its electro optical sensor. Slide, please.

I'm not going to go into too much detail on the sensors. Let's suffice it to say that they have very good resolution and can provide a great deal of information. Slide? The slide you should be looking at is just a picture taken up near Palmdale, and I think the point is that's electro optical. It is primarily during the day. But it has reasonable detail. Slide?

This is an infrared image and is probably the most usable in a wild fire scenario, in any fire scenario. Bluntly, the applications here are probably not fully developed. I will tell you that it is certainly possible to see people, and it is certainly possible to see flames, as you will see shortly. It is possible to discern if there had been any activity in any areas recently because those were leave heat marks. Slide, please. This is a synthetic aperture radar image and I think the thing I would offer here is that it's very, very detailed. It is certainly applicable to a fire line, but there are probably unlimited number of areas in military **(UNINTELLIGIBLE)**, civilian authority, or in disasters that it can be applied to.

CHAIR CAMPBELL: Amazing.

COLONEL CROCKER: Slide please. I'd like to emphasis again that it may be the areas that we have not looked into that could be the most advantageous in both homeland security and disaster mitigation possibilities. The hyper spectrometer, moving target indicators, in particular remote system, are all things you should understand and know about. Slide, please. Hyper spectral imagery is very broadband imagery. In other words, this can see an extremely wide bandwidth of information, far beyond what we would normally see. And when a database is appropriately developed for it, you can actually pull individual items out. It's probably difficult to see, but on the left hand lower side, there are red dots in there, and what's been requested is a specific kind of return, so it could be a plant, for instance, and it would give off, specifically a marijuana plant, would give off a certain spectral image, or a person, etc. And given time, you could just about pull out anything you want from this information. Also, it can, for lack of better dialogue, can see underneath things. The image that you see circled on the upper right, those images are actually underneath trees, so it can look and see things that we would not normally be able to see through normal imagery. Slide, please.

This is actually imagery of a fire, and I just would have you notice that there are a lot of ways of looking at this that I think would be usable to responders from the fire service. The top slide is **(UNINTELLIGIBLE)**, or black and white. It's of some limited use and clearly I'll just skip down to the bottom. There are ways to pull this out and of course the hot spots that would show up there would be the most usable to them. Slide, please.

I don't want to fail to mention the remote split operations, and I'll ask you to focus primarily on the right hand side of the screen. There is the ability to take a receiver out to the field so that an incident commander could actually get downloaded information. We probably have yet to see exactly how valuable that is. My point would be that, you could have this put into a regional control center, or a national incident commander, and I think there may be value in that. Slide, please. This is – one question was asked once, how would be have used this – this was the actual plan for how to use this originally. The aircraft was going to circle at 19,000', primarily between the Paradise and Cedar fires. It would have scanned the fire lines, allowed observation of what was going on in the fires, both paradise and Cedar. It would have transmitted that down to an op center and potentially down to two or three other local incident commanders. Slide, please.

This is a bit of a long clip, but I'd like you to see something in it. This is actual imagery of , I believe, it was the Grand Prix fire. As it turns out there was a Predator in a test orbit near Edwards and we had the opportunity to get that footage, so this is actual footage of, again, I believe it was the Grand Prix fire. You can see that it is not at all difficult to figure out where the fire is. This is infrared imagery. I will just tell you that while we have not done this, it is clear that you get a defining edge to a fire line at night, or during the day, and draw that if you will for both incident management at a larger level, at the distinct incident firefighting level. And in fact I think you'll see it here in a moment, it will look over its shoulder in a bit and you'll see the tail interfere, the tail of the Predator. It will actually look at a fire, which I believe was the Old Fire, and you'll see from a great distance by scanning the horizon, it actually found other fires. I think it goes without saying that that capability might have been useful. I should also mention that in the process of finding these – it's not just an issue of being able to see them, this can provide the exact coordinates of them so that you could actually plot a fire. And that could be done right now manually, although that certainly wouldn't be preferable. But with a little bit of work and some algorithms I suspect

we could get an overlay capability that would be real defining for the firefighters. Slide, please. Thank you.

These are some quotes, and I think it is self-evident that these were particularly bad fires, which is why we made an attempt to get this support. You'll see that FEMA did in fact support this. Slide, please. With no finger pointing whatsoever, I will point out that on the 30th we made the request for Predator. In the time it took to process it, we lost roughly the state of Rhode Island. That is clearly a problem, and in fact I'm here to tell you that to my knowledge, we never got a firm answer on whether Predator would be available, but it became patently obvious that it would not be by the time it rained on Saturday, the next Saturday. I think my point in that is not to point fingers, but to say that this unusual, it's a very valuable weapon system for the U.S. military and it's unusual request. It is, however, an effective mechanism for military support and certainly for firefighting. Slide, please. We don't really know what would have happened had we had Predatory, but we do know what happened without it. And I simply defer to Deputy Chief **RIGORITTI**'s comment that he believes at least that it would have been very valuable, and I think that could be echoed by many people. Slide, please. I'd be remiss if I didn't point out that this may be a discussion about fires, but there are a great number of threats out there that this system and this its capability would apply to, anything that can stay overhead for in the vicinity of 40 hours and give this kind of information has multiple applications. Slide, please.

Interestingly enough, our recommendations are short and sweet. We would recommend that this kind of capability, and you'll notice in the slides I used Predatory-like capability. And that's because there may be lots of answers to this, but you need longevity, you need time over the affected area in order to be able to provide civilian authorities the information they need, so you need at least Predatory-like, and that probably means a UAV because the average human gets panicky at 40 hours of flight, I'm here to tell you. The other thing is, interestingly enough, the National Guard **(UNINTELLIGIBLE**) and the Air Force are looking seriously at how to provide this **(UNINTELLIGIBLE)** potentially in the future through the National Guard. So as those issues develop, there may be an opportunity to support that initiate to use a Predator-like aircraft for military support civilian authorities.

CHAIR CAMPBELL: Thank you very much. Any questions? Senator **(UNINTELLIGIBLE)**.

SENATOR HOLLINGSWORTH: Thank you, Senator. Given the ability of the National Guard to have Predators in their arsenal, I'm assuming you're saying that would avoid the scenario of having a request for federal assistance, it'd be something that would be under the control of State Administration, OES, and governor **(UNINTELLIGIBLE)**.

COLONEL CROCKER: It would be precisely like our MAFFS airplanes. When we can deploy them under the Governor's authority in this case. OES would simply request it, and we would have them deployed almost immediately.

SENATOR HOLLINGSWORTH: Thank you.

CHAIR CAMPBELL: I have a feeling it's going to make its way into the recommendations. Any other – oh, yes, excuse me. Further questions **(UNINTELLLIGIBLE)** work their way down. Judy?

MS. MIKELS: Not to make a question as a statement, and I am a supervisor in the county that's provide to host the 146th. We love them. And we have two J models, and they're a brand new MAFF system, to they were sitting on the runway, ready to go. But in terms of UAV's, Predator-like, I'm glad you used that because there are several, and I will get some information for the commissioners, I don't ask anybody to come, but I'll bring stuff to read, there are several UAV's with the same type of capabilities that are much smaller and can be field deployed. You know, we don't necessarily always need to rely on military assets, if we could somehow have a consortium to obtain, or for the state to obtain, these UAV's, uh, these vehicles. I was briefed yesterday at a factory, happens to be in my community, but that's irrelevant, there's other technologies. But the ones that I was looking at can be carried by the firefighters in two briefcases, and that the receiving unit plus the actual vehicle itself and launched in the field with information received in the field. I bring all this up only to say, in talking about all the communications and the rush to do a lot of things, and the rush to try to figure out how to use military assets, there are new technologies that have been in use in the field 15 to 20 years that are within the reach of some of these agencies, unlike probably the Predator, a little expense for the state to own, but there are vehicles that could be used, so I think we need to examine all of those opportunities as well as trying to partner with the military.

CHAIR CAMPBELL: Thank you. Point well taken. One more question? Chief, go ahead.

CHIEF BOWMAN: Yes, thank you, Chairman.

CHAIR CAMPBELL: By the way, I appreciate you making all of these meetings, Chief, and thank you very much for traveling to Ventura, and coming back through Ventura, did you make it home that week?

CHIEF BOWMAN: I got home about 9:30, but was only because I had a flat tire when I came out of the meeting. I just have two quick questions, related to the imagery receiving, do you have any idea what the cost of such a devise would be? A mobile receiver and the availability?

COLONEL CROCKER: I do not know the cost. And I only know the availability in the Valley on those particular days. There are mobile units around, and I apologize I don't know the cost of them.

CHAIR CAMPBELL: Thank you very much, Colonel. I appreciate your presentation here today.

MR. VERGA: Mr. Chairman? If I could just –

CHAIR CAMPBELL: Oh, I'm sorry.

MR. VERGA: That's okay.

CHAIR CAMPBELL: Secretary Verga.

MR. VERGA: I'm pleased to hear the supervisor's comment about -- what is really relevant to our discussion is in fact the imaging and surveillance capability to be able to discern the fire line. It's not really the issue of the particular air vehicle that would be used to provide that. I mean, the Predator is one of, as you said, one of many different platforms. It's just that. It's a small airplane that carries about 450 pounds of stuff. It can't fly anyplace any other airplane can't fly. There exists right now the capability like that on various sensor platforms around the country. So that's what the real issue is, the – you know, the issue is not a Predator which is built for specific military purposes, has some shortcomings when it comes. The reason that the Secretary of Defense turned down the request for the aircraft, and it was in fact turned down, was safety of flight issues. It does not have a particularly good safety record. We were reluctant to allow it to fly over essentially populated areas, even though it's out in the wild fire areas, there's still houses and, you know, it wouldn't have done good to crash and start another fire. So, that was the principal reason that that particular request was turned down. There were alternative capabilities, some of which were even in the civil air patrol, some in other National Guard units that were offered, but, you know, time ran out essentially. But, I think the point that is most relative is in fact that there are advanced technologies having

to do with areas of aerial surveillance that may be applicable to firefighting and I think that's worthy of exploring.

CHAIR CAMPBELL: Thank you. It's a point well taken. There are other aircrafts available, but I like the name Predator. [Laughter.] If you like Predator, you'll love Global Hawk. [Laughter.] Alright, next we have Dr. Philip Regan. And let me tell you Dr. Regan, there was an article in the Sacramento Bee about what you were doing out there in, is it Rancho Cucamonga, or, no Rancho Cordova. Or somewhere out there.

DR. REGAN: Here!

CHAIR CAMPBELL: Around here. Okay. And so, I said when we were putting this meeting together, I said "Call out there because I want to hear about the strategic fire mapping." So, it's all yours, Dr. Reagan.

DR. REGAN: Thank you very much, Mr. Chairman, and the commission. It's a pleasure to be here, and I'm dying to address some of these issues you've been talking about. I've been with the USDA Forest Service and the research branch here in California, that's the Pacific Southwest Research Station, for 25 years, and since 1983 I've been doing fire remote sensing research. We started out working with NASA over the years, and I've had some association with the **(UNINTELLIGIBLE – Erast?)** program, which has been developing UAV's and applications for them. Actually for about 10, 12 years I worked primarily with the government of Brazil, helping them to find means to deal with their fire problem, and they have a serious problem as well. What we've done in the last three years is to bring some of this technology we've developed for fire remote sensing and bring it back to bear here for the folks back home, which we think is extremely important to do. I'll try and be brief today, but I would like to give you an idea of what was happening during the fires. And I have two presentations, basically, small. **(UNINTELLIGIBLE – turned away from the mike)** This is close to on target. This is the post-fire scene for the Old Fire, and what I have is, this is one hour and 52 minutes after it ignited. This is an image of the fire, shown **(UNINTELLIGIBLE)**. It was collected with the PSW airborne sciences aircraft, which is a Piper Navaho, using a new instrument called the Fire Mapper. The Fire Mapper is designed specifically to measure fires, which are a bit of an unusual target. Most everything you just saw, for example, was a not a very hot target, and most of the flares, other remote sensing symptoms, satellites, etc, that are being used today, are really

designed for other purposes, be that weather monitoring or surveillance issues. The targets that we deal with in fire are quite different. What I'm going to show is just a short sequence, and the area that's in green is basically the area of coverage. The background image is a post-fire picture that we've done with remote sensing. The areas that are in successively red, orange, yellow and white are areas of increasing fire activity. The Fire Mapper measures in the thermal infrared and it gives us a measure of the temperature of the ground surface, even the beneath flaming combustion. Turns out the ground is a very solid, very hot target. Flames are very thin optically, you know they're even warmer and in **(UNINTELLIGIBLE)** infrared you really see right through flaming combustion down to the ground surface. About the maximum temperature you ever see in a flaming front is round 800, 900 degrees Celsius. Of course water boils at 100, and were comfortable here at about 25, so we have a scale from roughly 25 to about 800 degrees that you deal with in fires. Now, we were originally tasked by South Zone to fly on the Grand Prix fire, and the Old Fire popped up and we knew it was in a very important area because we've been flying for the last year, mapping the beetle-killed trees, not only in the San Bernardinos, but also on San Jacinto, on Mt. Palomar, and in the formerly beautiful **(UNINTELLIGIBLE)** of Rancho State Park. So we were very concerned about the affect the fire might have on the mountain community. Now, as we fly we're flying successive lines, and you can see the progress of the fire here, down low on the right, it's burning down into spreading grounds on the edge of the city. You can see on the uphill side there's an area in the yellow and white, very high fire activity, and the fire progresses on, now back down toward the city. On this occasion, we started to focus on flying the urban front, because we knew if we had a chance to get the information back to the firefighters on the ground, that's where they had to concentrate their efforts. So, just to show that the uphill side is a little less recent, we've changed the depiction a bit. And, you can see the fire now spreading up on the south-facing slope on the lower right, and it spreads out, it's now moving further up hill toward the mountain communities, and so forth. And then this is the post-fire image. So I've just shown you basically a progression made from the whole series of aircraft over flights at 17,500 feet, over the Old Fire, and we just watched about two hours of progress in this fire. Well, we all know there's a need for fire information. You may not realize it, it's not only something you want to know right during the fire, when the fire's being fought, for science. If we're trying to understand the impacts of fire on the environment and mitigate those impacts, it's important to know about measuring fires. We try to learn about post-fire

erosion and the affects of fire severity. And by the way, severe fires do engender greater amounts of mud and water. We tried to learn about nutrient loss and about what affects ecosystems and seed destruction and smoke production, and all these environmental impacts we have to suffer with catastrophic fire. The problem was we could never measure the fire. And that's why we got into this business was to learn how we could know what the fire was doing. We developed remote sensing systems, but it became so important to take the information that we had and move it quickly to the folks that are working so hard on the ground to protect lives and property, that we've now moved our focus into that direction as well.

Infrared systems, as I worked with, can make not only large fire properties where the fire is, it's location and it's rate of spread and so on, but also we can estimate rates of energy release and from work we've don with other sensors in Brazil we can estimate the actual amount of fuel that's being consumed, and here we're getting direct measures of the amount of heat that's going into the ground, and that affects such things as the amount of erosion and flooding and so on, the problems we deal with **(UNINTELLIGIBLE)**. We're working with a Fire Mapper, which is a unique thermal imaging radiometer. Basically, it uses a detector ray, which is the basis for all the new night vision devises in the U.S. military. It was developed over about a period of 10 years by **(UNINTELLIGIBLE – darba?)** and a consortium of about three or four years ago of several companies, including Honeywell and Lockheed Martin, and so on. Worked out applications in the civilian arena, one of those small companies involved with the big boys was Space Instruments, which is located in Encinitas, California. The Forest Service has a research joint venture with Space Instruments and we're developing the Fire Mapper as a technology that will do for us what we need in measuring fires and producing that information for fire operations. In the lower left, the gold canister, about a foot and one-half high, is the Fire Mapper itself. The prototype for this instrument was shown on the space shuttle back in 1997 – we have No. 2 – and our Piper Navaho research aircraft is shown on the right. Of course, in any major fire, there's a lot of confusion. It's been very interesting to me to talk to people that I know in the fire services about what they're doing. I had a friend that was a battalion chief for L.A. county several years back, and I asked him what he was doing in 1993 when the big fire was burning into Malibu. He said he and his driver were trying to stay in front to find out where the fire was. You listen to the radio and you listen to the citizens, and they report, well, the firefighters were across the canyon this morning, fighting the fire, but now the fire's on my side of the

canyon and I just want to know when they're going to come save my house. It doesn't take very long before you understand that there is a real problem, as in war, in knowing exactly what the fire's doing, where it is, there's terrain, there's smoke, there's brush, there's trees, it's hard to know what's coming when you see that glow. That glow may be a half-mile away, it may be five miles away. That's why there's such a need for good fire information.

There's the Old Fire. This is a color composite with two visible light cameras, actually one in the near infrared, we put in green here in this image so you can see the green areas are those that are vegetated and healthy. But you can see the large smoke plume going across the center, it's the same plume I showed you in the last picture. When you add the thermal infrared, you're able to see right through the smoke and see exactly where the fire is. Now we take that information and our imager is different from most of those available because it does not saturate. It's like getting the settings on your camera correct so that you actually see a true perspective – the things that are brightest appear brightest, and the things that are darkest appear dark. With most all the infrared symptoms out there, you can measure the brightness of an object up to a point, and then beyond that you really don't know, you've hit the ceiling on that imager. And so you end up with a white blob, as one might say, on the interior of a fire line. You have really no information about the fire itself, which we think is important. This is just a color composite. We actually take those and turn them into a temperature map. Here are the orange, and bright yellow is probably in the 300-Celsius range. On the upper left is the spreading ground, and you can see the fire is trending across the hillside and the successive images and burning into the Del Rosa neighborhood. Notice there was not much in the way of individual spot fires on those initial images I showed, those were up on the hillsides and it's rather surprising and I'm looking for those. We all want to know about spot fires, when do they occur, under what conditions of vegetation and wind and so forth.

CHAIR CAMPBELL: You're just spotting – you get all this information from the air.

DR. REGAN: Right. It's all flown from our aircraft. Here you can see it's a very irregular burning pattern, and it happens to be there was a lot of spotting that was carrying the fire right into the neighborhood. But it had not been particularly effective in spreading the fire on the hillsides. The large streak that's going straight down to the bottom is the fire burning along the side of a spreading grounds where there was some vegetation.

CHAIR CAMPBELL: How high does your aircraft fly?

DR. REGAN: Unfortunately we're limited about 18,000 feet. It's an unpressurized aircraft. These individual spots here are all basically burning homes. I have to tell you that I'm very sorry to say that I have learned to recognize burning homes in our imagery. We saw a lot in that week. Here's the same fire now shown in a 3D depiction so you can see it on the hillside, and now it becomes more obvious exactly where the fire is on the hillsides, where it's burning down into the city. This is exactly the kind of information one would want in real time if you're trying to deploy into that neighborhood to find out exactly which homes are burning and which ones are starting. Here's the after the fire image. Now the plane actually can take pictures in the thermal infrared, and we all see these as other camera. We're looking straight down. We used modern image processing, basically the corporate image processing software that the Forest Service uses. We take the imagery, we put it on a map base. I can point on one those individual fires and get latitude and longitude from it. And then we create these 3D maps as a way of visualizing the fire. We continued to fly the Old Fire throughout the period it was burning. This is where the fire had made a run on the 29th of October, blasting by the east side of Lake Arrowhead, and here we've just shown the orange, red and yellow, the fire line temperatures basically so you can see exactly where the fire activity is. It was interesting that morning, the news media was reporting that the fire had burned up into the south side of Lake Arrowhead, which was incorrect. And since there were about 60,000 people that had been evacuated from the mountain communities, I'm sure there were a lot of anxious citizens. It turns out the L.A. Times picked up our imagery, which is posted on the Internet and they published it the next day, in a nice half-page spread. Course they got the attribution wrong, but the good news was they found us, we found them, and now we have another means of communicating important information about fires back to the public. This was the piece that was in the L.A. Times the next morning.

CHAIR CAMPBELL: Do you also communicate this to the fire personnel?

DR. REGAN: Well, at the moment what we do is to – yes. We try.

CHAIR CAMPBELL: Thank you.

DR. REGAN: At the moment we are using a very slow satellite communication system that lets us transmit one image about every minute to two minutes. But on smaller fires, or for instance at the beginning of the Old Fire, we were successful in moving the data to a satellite communications system, it's

the Radium Satellite system, and back to an FTP site on our Internet server. I have an analyst working, actually telecommuting from Seattle, who picks up the data and does all the image processing, puts it on the map, and posts it back on our website. The best we've been able to do is about 90 minutes turnaround. We were really quite overwhelmed. We started out flying the Piru Fire, flying in L.A. County, the Grand Prix Fire, the Old Fire popped up, we went right there. On the 26th, my pilot said, "Gee, the fire's burning into the outskirts of San Diego." So we diverted and went there first that morning. I just wanted --

CHAIR CAMPBELL: Doctor, I appreciate it. We have a time problem. I'm going to have to ask you to wrap it up.

DR. REGAN: Okay. This was the Cedar Fire that we imaged. This was the first synoptic view of the Cedar Fire that was available. We **(UNINTELLIGIBLE)** that as well in 3D. Just to conclude, then, we're now developing the Fire Mapper 2.0, we're going from basically a prototype to a commercially available system, we're working with the Forest Service region to put one of these onto their Cobra helicopter that you heard about today. We're also working with the Bureau of Land Management who has expressed interest in putting of these in a tactical role on their lead plane. We have a couple of improvements that we're making on our system. We do fly in southern California routinely on wild fires. We're here, we're available, and we're working with **(UNINTELLIGIBLE)** in San Diego, which has a satellite communication system that will take us from roughly a 9600 baud communications up to 128K. We'll be able to transmit one image per second. We are trying very hard this year to improve our system so that we can communicate our fire data, registered to a map, within about 15 to 30 minutes, something like that. We think we can get the time down that far. We're also hoping to improve our aircraft performance. Our biggest limitation to date is that we have trouble dancing around very large smoke plumes. The one I show on the right is going to about 22,000 feet on the Grand Prix Fire, and it's rather a dangerous situation to fly **(UNINTELLIGIBLE)** across fires and have the plume pop up underneath. Thank you very much for your time.

CHAIR CAMPBELL: Thank you very much. Appreciate your being here. Next I'm going to call Supervisor Gary Gilbert, representing the counties of the state of California, and our witness after that will be John Chisholm and Leonard Kirk, and then we have four representatives of the – three – and we'll ask

those three representatives to come up, we've got three chairs there when their time comes. Supervisor Gilbert, thank you for being here.

MR. GILBERT: Thank you, Mr. Chairman. Mr. Chairman, elected officials, distinguished members of the Governor's Blue Ribbon Fire Commission. I'm Gary Gilbert, County Supervisor of Madera County. I'm a member of the California State Association of Counties, and on behalf of Paul Stein, our president, and all the supervisors in California, we applaud the efforts of all local officials, the fire service, **(UNINTELLIGIBLE)** personnel, and their handling of the recent catastrophic fires that occurred in San Diego, Riverside, San Bernardino, Los Angeles, and Ventura counties. Like so many disasters of this magnitude, CSAC hopes that lessons are learned, steps are taken, to insure that similar types of disasters are avoided in the future. I believe the testimony you received throughout your hearings that the wild land urban interface fire protection problem or prevention, it's not a new problem, were the recommended solutions. And I'm going to make the presentation as short as I can.

CHAIR CAMPBELL: Appreciate that.

MR. GILBERT: These reports have been coming out very often. 1960's, 1970's, 1980's, 1990's. Most of these reports are containing the same information. Defensible space must be provided around structures, wild land fuels must be actively managed, and appropriate land use, the zoning, partial size and construction methods for structures in the high fire hazard areas must be implemented. Jim Venable gave you a document and it's a very important document that the problem is not new, we have no new solutions. Our problem is implementing the known solutions. We have deferred decision making is as much of a problem as fire **(UNINTELLIGIBLE)** themselves. If the history is to serve us to the resolution of the wild land urban interface problem, CSAC will respectfully request that this commission take action on those known items. To do anything less guarantees that we'll have additional reviews in the future. Prior to the Cedar, the Grand Prix, the Old Fire, and many others, we had the fire in East Bay Hills of 1991 that was a very dynamic wild land fire disaster. We've learned from that, we had the wild land fires, if you do the samplings since 1970, the loss of wild land fires across, especially western United States, is staggering. The southern California fires in 1993 was another prime example of some of the issue we're faced with. The common denominators throughout all these fires is poor access for emergency vehicles, hot, dry weather conditions, sloping topography, a build up of wild land fuels, narrow roads, inadequate defensible

space, and roads that hamper both the emergency access and evacuation of homeowners, and the use of construction of materials that are highly flammable – all these common denominators could have been eliminated through subdivision or individual home construction, planning and defensible space. Most of these wildfires and the losses from these wildfires can be minimized or avoided by very simple steps and precautions. The fire protection problem in the wild urban interface is a very complex issue that your grasping with right now. Jim Venable, again, said we know the problem, we have the solutions, let's implement those, but it's not going to be a simple solution. It's going to take leadership and cooperation. We've seen that through the California Fire Chiefs Association, we've seen it through the International Fire Chiefs Association, by members on your commission, Chief William McCammon of the California chiefs, Chief Gary W. Smith, who represents international chiefs, FIRESCOPE fire chiefs, and all their chiefs in southern California are represented and trying to deal with this issue. CSAC is a partner in this and this coalition. We've accepted this call to action. The league of cities and the counties, we've adopted a policy statement. It's attached for your review, that we're calling the Call to Action, to cooperate, collaborate and communicate the development of better land use policies and wild land fuel management programs in the urban interface. We've identified four issues, and they're pretty simple issues. They were identified in the Ventura presentation from Chief Bob Roper as population growth. That growth is occurring in the wild land areas, they're occurring high fire hazard areas, that growth must be prudent, it must be responsible, it must limit the risk and if that development is going to occur, beats fire safe standards. The increased fuels, the fuel loading is increasing, we have higher tree density, dead, dying trees, and that is a massive **(UNINTELLIGIBLE)** problem that we must address through fuel modification programs, your vegetation, you heard it in Ventura, or environmental or regulatory agencies are hampering are agencies, whether it be through the coastal commission of $12,000 per acre to provide mitigation on defensible space, or the recent fire in Riverside county where over 30 structures were lost between a habitat issue and clearance around the structures. The last issue is increased cost of this suppression. The damage of the large catastrophic fires are increasing. The damage of the structures are increasing, and the suppression cost will continue to increase. But they can be reduced, and they can be reduced by local government policies, zoning, land use, building construction, consistent with the wild land urban interface code developed by the International Fire Chiefs, and also an aggressive vegetation fuels management program in California. In addition to that,

the CSAC policy is attached for your review. There's four recommendations in there that I believe will go a long way to handle some of the issues. There's recommendations in an article that California counties presented, you need public support, we need to look at each county and city's general plan where the wild land issues were causing a high fire hazard risk. **(UNINTELLIGIBLE)**

CHAIR CAMPBELL: Supervisor Gilbert, we will make sure all of your statement will be part of the official record. If you could conclude your presentation.

MR. GILBERT: Okay. There's legislative opportunities, and the main issue that we're referring to, and it's been through your hearings, is that minimum 30' clearance is inadequate in California. You need to re-address Public Resources Code 4291, minimum of 100' is addressed in our handouts. And in closing what we would say, defensible space must be provided for high hazard areas, wild land fuels must be managed, --

CHAIR CAMPBELL: Senator Hollingsworth has a bill on that. Already.

MR. GILBERT: Thank you.

CHAIR CAMPBELL: I want to say this. I appreciate your being here. I appreciate the fact that you've gotten together with the league on this presentation. That's very helpful to us. The recommendations in here by the way, which I have read, are excellent. And we appreciate, and we'll be calling on you as we go to – CSAC and the league – as we go to make recommendations.

MR. GILBERT: Thank you.

CHAIR CAMPBELL: Thank you very much for being here, and I appreciate your understanding of our time dilemma. John Chisholm and Leonard Kirk, we have much of your information, all of it, which will be part of the official record. We appreciate your coming down from Alaska, Mr. Kirk.

MR. CHISHOLM: The comment is to make it brief, brief, brief. Correct?

CHAIR CAMPBELL: Yes. And if you'd get as close to the mike as possible, John, we'd appreciate it.

MR. CHISHOLM: Okay. My name is John Chisholm, Leonard Kirk. I'm from Lake Tahoe, he's from Anchorage. The purpose of our presentation is two fold. The background is technology that's available to improve fire suppression. Two points in our presentation – one is, a discussion of the technology and how it can be used. But most important is that, when you listen to all these presentations,

including the panel members and the professionals, you get different opinions, and you don't really know what is right, who's saying what – so the real focus of our presentation is to convince you gentlemen and the fire suppression people to participate in flight demonstrations of the technology so that, not necessarily you, but the professional who get a hands-on feeling for what the technology can do, and therefore they can make recommendations based upon that experience as to what we go from there --

END OF TAPE 3, SIDE B; START OF TAPE 4, SIDE A [mid-sentence]

-- trying to suggest people do, is provide the Fire Commander – Incident Commander a display such as you see there. That display shows the contours of the fire. Now I've heard two very good presentations, the last one was beautiful on how you can generate the contours of the fire from infrared imagery, okay. Also, annotated on that contour of the fire is a vector showing the predicted future location and intensity of the fire and discuss that. That display also is annotated with the location of the aircraft involving in fire suppression and the location of the ground personnel and vehicles involved in fire suppression. My background is military avionics and command and control, so I tend to think of this thing as a military command and control system. The fire is the enemy. We're just going to go – many troops are going to have is a prediction. The location of your friendly forest is the airplanes and ground people and there's another item, which – what are your munitions, which are the retardant and how do you improve munitions? I'd like to have the next slide, please.

We're now going to talk about how you locate and communicate with airplanes. The present procedure for controlling or locating aircraft in your traffic control system is via a surveillance radar that goes round and round at the airport. The problem with that thing in mountainous areas of the west are there are a lot of fires. Is that – the airplanes are screened by the intervening careen from the radars. And so therefore, the air traffic controller can't give the fire suppression types an idea of where they are for that type of display to the incident commander. There's another area of the world that has a similar problem. Can I have the next slide please. When you wander around Alaska, you find there's many areas of Alaska in which there are no infrastructure, all the native villages are located on the Yukon River or the **Cuscone** River. There is no roads between those. Everything goes by air. It used to go by dogsled, very slowly, now it goes by air and within the villages there are essentially no roads. Can I have the next slide.

This is a photograph, an actual geographic July '98 titled the story was *The Yukon River* and it traces the birth of the Yukon River and the Yukon Territory in Canada to exits in the bearing sea at the little village of **Coplec**. I first became aware of the Capstone project, which Leonard is gong to describe in detail, when I visited that village a couple years ago. Coplec is the birthplace of my wife and I have more inlaws there than any place else in the world and when I visited Coplec a couple of years ago, I flew in there on a little single engine airplane and I noticed the pilot was using something I had never seen before. A navigational and air traffic control system, which I subsequently found out was the most advanced air navigation air traffic control system in the world, bar none, and was servicing a little village like this because it not only saved lives, it is extremely cost effective. I'd like now to turn this over to Leonard to describe the Capstone system. Leonard's background is in 17,000 hours in the air. Seven thousand above the artic circle, 400 in firefighting.

MR. KIRK: Thank you John, and there's a brochure in – just a single page flyer (**unintelligible**) has a Capstone website address on it. The thing I want to say about Capstone, I'm with the University of Alaska. I'm down here because I think I can provide a tremendous enhancement to safety of their operations and all kinds of activity in the fire front. As a pilot, somebody who's had experience with fires took the time yesterday, we arrived early yesterday to go out to the fire areas to see where they were, so I could say with confidence, if you use the equipment we have in Alaska, I would feel comfortable flying those fire fronts with this equipment with a greater safety and mobility to do it even during hours of darkness and during areas and times with very limited visibility due to smoke, haze, fog, etc. The two screens I have up here – this is being projected right off the equipment we have installed. The benefit of the Capstone equipment, all this equipment was paid for by Safe Light 21, which is Division of the Department of Transportation. The (**unintelligible**) is paid for out of an RB grants when you purchase this stuff there is not the licensing fees, the costs of buying this equipment you would normally have for this kind of safety equipment. All this stuff is now certified. We had a gentleman here earlier talking about his aircraft, these helicopters, the difficulty getting things STC and approved to go in the aircraft. This is all certified and operating now at 200 aircraft real time in Alaska. We're data linking information to the cockpit in the form of graphics and text. We started the project two years ago, the data link and the **(unintelligible**) radar was next generation Doppler radar to the cockpit to prove that we could data link large masses of high

resolution data with this data link system to the cockpit, and we're doing that very successful. (**unintelligible**) send information on a real time basis, second-by-second. On the right-hand screen, you see a number of aircraft moving. We're data linking the aircraft every second we get a 54 bit data package from all the other aircraft in the area, so we know the velocity vector, which is the arrow ahead of them, which direction they're headed. (**unintelligible)** to the speed. Their distance from our location. On the left-hand side of the screen is terrain data. This is all colored depictions so it can be depicted at various levels. This is very high resolution trained database. Everything that is black and color on that screen is 200,000 feet below my aircraft. Everything that's green is from 2,000 feet to 700 feet below me. The yellow is from 700 feet below me to 300 feet below me and the red, we don't go there, because red you're dead. That stuff is 300 feet below to at and above my altitude. The usability of (**unintelligible**) information on a real time basis in the cockpit traffic information with the other aircrafts are is the ability to data link all that back through (**unintelligible**) or through a satellite link, back to people on the ground and we have demonstrated that very successfully. In Western Alaska where John was talking about, we're flying to all these communities and everything's being data linked to – there was no radar out there at all, but we have better than radar because we are able to see each other, control our aircraft and do things. The only thing I've gone here to do really is invite a group of you if you are interested in this technology to come to Alaska to see it work real time. For those of you that have been with the Forestry Department and so forth and have been involved in fire control, and I know I've worked with people at the interagency fire center in Boise in the past, you come up and see it work. I think you'd see a tremendous application that is very affordable technology, that's already certified, available to enhance the envelope of opportunity at operator aircraft. More hours a day under more conditions and provide a greater level of safety in the fire activity and that's what we're here to do and invite you to come up.

(UNIDENTIFIED MALE SPEAKER): Thank you very, very, much and we appreciate your information. We'll put it in the record. And as the Senator said, we're kind of short. Can you kind of capsulize your close for us.

MR. KIRK: I'm done. He just has a couple of comments here. He just (**unintelligible**).

MR. CHISHOLM: We discussed this problem of predicting where the fire's going to be and it's intensity in the future. In order to do that in real time, you need two capabilities; one is to create a model of

the fire, which includes the fuel loading, the terrain and the atmospheric conditions. One of the things that is typically missing in that situation is a measurement of the atmospheric conditions around the fire. What is the wind, temperature, and humidity. Where is the fire going to go? In Capstone, they have the same problem in the Yukon Delta. There's no infrastructure, no radio sond, so what they did is turn each aircraft into a radio sond and they put an atmospheric sensing package on it from (**unintelligible**) and that data is communicated back to the forecasting center so that available at the forecasting center is better weather information when you typically get from the radio sond, it's a continuance radio sond going up and down. The implications of that for predicting future location and intensity of the fire, is that if you had your suppression aircraft configured with Capsone as we are suggesting, plus configured with this atmospheric sensing package, that could all go back to a computer (**unintelligible**). In terms of the ability of the computer to Los Alamos – been working on that problem for a number of years, and you're talking to them at the fire summit, or some of the people there are the fire summit last week or last – in San Diego – they stated that they now have that on a conventional PC that could be at an instant command site. So you'd be able to get essentially all of that. Now another problem.

CHAIR CAMPBELL: I'd like to thank you because we are so late, Senator's going to get to his plane here shortly. We have two more people to go. So if I could ask you just to kind of wrap it.

MR. CHISHOLM: Okay, I'll wrap it in the sense that he is suggesting that in order to touch and smell this capsule when you go up to Alaska, okay, and actually fly it, the fire suppression person (**unintelligible**). The other thing is – this business of infrared imagery. In 1996 a C130 of the Reno International Guard over flew a bad fire and gave beautiful IR image of the fire. The Bellhi Ranch Fire. Okay. The airplane he used was a C130. As you can see at the bottom of it, it's got a predator turret. We had a long beautiful discussion what the predator turret will do. Eight C130's in Nevada are configured with the predator turret, a satellite link, but in addition, they are configured with a workstation. The fire commander can sit up on that workstation, view the IR imagery, view the location of all the other aircraft and move right to the fire take command of it, and that is the second part of the demonstration. Go to Alaska, see the Capstone operating, then come back here to California and decide whether you'd want to see the next set with the C130, with the fire commander in the airplane with the IR imagery, with the location of everybody displayed as an original (**unintelligible**). End of message.

CHAIR CAMPBELL: Okay. Will John Sorenson and Robert Roy come up.

MR SORENSON: Thank you very much Chairman and members of the commission. Ladies and Gentleman. I'm going to make mine very short. I have a package here that I would like to enter into the record. It very much follows the last presentation. There's a lot of technology we feel that the media is to have some demonstration projects where we can get these technology out where we can link together the various air and ground modes and work out the day link requirements for those nodes, what the procedures are, what the training is and so forth. There's no lack of technology. What we need to do is figure out how to best use that technology, how to bring it in, how to use the resources that we have and I'm going to just keep it short at that and I'd like to enter my package for you and if there's any further questions on that, I can address them at the next meeting.

CHAIR CAMPBELL: Thank you very much, we do appreciate it and we do have your package. Thank you very much, Mr. Sorenson. Mr. Roy.

Mr. ROY: My name's Robert Roy. I'm hired from the fire business. Commissioners, I appreciate – I know it's very late – I'd like to talk about two concepts where I feel that fire service falls short and one is keeping focus on what our mission is and when Montana was in flames, the Director of FEMA had a press conference and he said the key to all these wild lands fires is everyone of these fires started as a little fire and I think we can all admit that if a fire's big enough, the weather's bad enough, we don't put them out. The only chance we have is to get them when they're little. We try to manage them, we try to put as much resources in the path of it, but til it runs out of fuel or the weather changes, we don't stop them. So the point I'm making is that I think – I cringe when I see pickup trucks in the woods that say Fire Department and there's nothing in the back of it, because there hasn't been a good piece of equipment to put in these light vehicles. Typically the Fire Department, the idea of putting out a fire is a pumper. A big pumper and a big engine and so the solution for a little one was to scale that down. It makes for a big cumbersome rig and so anyway, I think there's technology out there where if a vehicle or even a command vehicle, it ought to have a little bit of water. Maybe five gallons or something. And now with the gel technology and the foams, if nothing else, a strike team leader (**unintelligible**) something in his command vehicle, he could maybe save himself. I can remember when we pooh-poohed fire shelters and it's standard now. And we talked about communication. Radios and all this stuff. There's a small town chief in Oregon this summer who beat his

engine company on a house fire. He had great radio communication, but nothing to put the fire out and he gave what they called progressive (**unintelligible**), got a little smoke, a little fire, then a lot of fire, then his commission (**unintelligible**) – why didn't you do something. And he said, well I don't have anything to put the fire out. What'd you want me to do, throw my radio at it? Anyway, I think everything in the fire services, the fire department, there ought to be a resource. There's nothing worse than a fireman pull up on scene and not be able to do anything. I've got two fireman friends, one is a chief, one was a paramedic in L.A. city, we've got tons of engines (**unintelligible**), lady burned up in a Volkswagen.. He and his paramedic (**unintelligible**) burn to death. Another one on the freeway is first on scene and five minutes of the wild land fire, waiting for an engine to get there, a spot fire can be the next big Malibu Fire. Anyway, the other thing as a fireman when I worked in Bel Air, I realized every homeowner's thought – I've got a ten million dollar home, I'm going to get a fire truck. You tell them clear the brush, clear your brush, leave the fire fighting to us. That's good and it's bad. There's so much more they can do. There's so much more than just – if we go back on the record, I think you're going to find that there are a lot of houses and towers had stucco – had there 100 foot clearance, and they still burnt down to the ground. That only gives you the (**unintelligible**) and we'll giving them false senses of security. If a fire's coming through and you've got to (**unintelligible**) 20 lanes of freeway 200 feet without something (**intelligible**) is it going to cut it? I think evacuation is good, but because of liability, we can't say don't evacuate. Where do we lose people? We're talking about saving lives, we loose people when we aren't able to give them advance notice and say, the fire's right there, head over there. Maybe it's leaped over and it's covered their way out. (**Unintelligible**) engineers and fire service should get together – with flash fuels, (**unintelligible**) really quick. High-rise buildings are not always feasible to evacuate everyday, so we make safe refuge areas and (**unintelligible**). A homeowner could have a safe refuge room one hour fire protection and if they're unable to evacuate, I'd take my chances there with a fast moving fuel, you don't get out with a garden hose and get fried and take refuge in there. (**unintelligible**). I'm working with a guy who (**unintelligible**) fire curtains and fire shelters for dozers and wild land. We looking at residential fire crews. There's the gel products, there's – but we need to get – if there's an earthquake you tell people, we're going to be overwhelmed. We can't be there. You've got to be self-reliant. What's the difference, with a major fire, we're instantly overwhelmed. We run out of resources like that, and homeowners need to know we will throw everything at it we can, but

there should be studies to validate what's good, what works, and what doesn't work, because all these homeowners are going to be so scared and so vulnerable they'll be open to every charlotte ton and they'll be selling all kinds of stuff, spray this on your house and it'll it protect it for 50 years. Industry and the fire service should get together and say, this has worked, this doesn't work and give them some tools, give them some options.

CHAIR CAMPBELL: Thank you Mr. Roy. Let me ask you. I appreciate you being here. Can you put your testimony in writing this minute to the committee. I would appreciate it.

MR. ROY: I certainly will.

CHAIR CAMPBELL: Okay. Thank you, and it'll become part of the official record. And those are good recommendations by the way. Thank you for testifying.

Ladies and gentleman the hour of 1547 have –

DIRECTOR WILLIAMS: I'm awfully sorry Mr. Chairman.

CHAIR CAMPBELL: Not a problem. The hour of 1548 having arrived.

DIRECTOR WILLIAMS: I'll be less than a minute. I really enjoyed this afternoon's presentations and would especially like to thank the folks from Alaska that came a long, long ways to give us some information. I want to return real quickly to Dr. Riggins' presentation. A lot of us saw the sequence and fire growth of progression slides up there and they're instructive in terms of the new technologies that are out there, but they are also instructive in terms of operational decision space that they're telling us. And these rates of spread, and Dr. Riggins correct me, but we're talking about fires that are moving at 20 meters a minute, burning at over 800 degrees centigrade, spotting ahead of themselves a mile to two miles ahead of the main fire truck. The tactical took of choice for firefighters under extreme burning conditions is not air tankers, it's large fast-moving backfiring operations supported by this kind of intelligence with engines. This is where this technology, I believe, is very, very promising.

As a quick aside, one of the things we're seeing throughout the west with this new imaging technology is that even under extreme burning conditions, like these slides would depict, where we have treated fuels, this imagery is showing that's where the fire lied down, and that's where the fire services are able to pick it out.

CHAIR CAMPBELL: Thank you very much Director. I want to thank everybody for being here today. I want to thank the commission members who stayed. I want to thank those who made presentations, for their presentations. Our next hearing will be on February 19th in Costa Mesa. At that hearing we will review firefighting training, emergency medical service, the insurance related issues. We've asked Commissioner Garamendi to come down and talk about some of the insurance problems that people have and the hearing has been scheduled for March 18th, and that hearing will likely be held somewhere in Los Angeles, very near LAX.

Thank you all very much and this commission stands adjourned.